

APPENDIX A

SAMPLING PROCEDURES FOR AIR TOXICS TEST

Sample Name:	Particle Size Fractionated Samples for Chemical Analysis
Process Location:	Particle Size: Inlet to Module E and stack. Size Fractionated Sample for Analysis: Scrubber Inlet, Stack
Equipment:	SRI/EPA Five Series Cyclone with stainless steel probe; tared quartz fiber filters with plastic Petri dishes and glass vials for cyclone catches. Only the first two cyclones and a filter will be used, providing size fractionation at about 10 micrometers and 5 micrometers. The cyclones will be operated <i>in situ</i> and will have been teflon-coated to minimize contamination from the stainless steel from which they are made.
Collection Frequency:	Sampling times will be based on particle concentrations found at time of test but will typically be about 90 minutes at the scrubber inlet and 240 minutes at the stack.
Procedure Summary:	Stack gas sampling equipment is calibrated no later than 60 days after last calibration as described in the Quality Assurance Plan. An initial traverse is made with a pitot tube at each sample port following EPA Methods 1 and 2 to establish sample traverse points, gas velocity profile, temperature, and flow rate, and to check for cyclonic air flow. The sampling train is assembled with clean cyclones and a 63 mm quartz fiber particulate filter, a stainless steel condenser and a dryer containing 200-300 grams of silica gel. EPA Method 5 procedures are followed for pre-test and post-test leak checks, isokinetic sampling rate, and data recording. If the velocity distribution is flat, sampling will be done by traversing in a standard Method 5 fashion, but at a constant sampling rate. Otherwise, sampling is done at a constant sampling rate at four points within the duct which are selected by virtue of having

velocities equal to the average duct velocity. Alternatively, sampling may be confined to the high velocity portion of the duct if the velocity distribution is badly skewed on the basis that the bulk of the particle transport would be expected to occur in the high velocity area. The cyclone/filter section of the sampling train is moved intact to the cleanup area for sample recovery as follows:

The cyclone catches are removed in two portions for each cyclone. First, loose particles in a cyclone are poured or brushed into a tared vial. The remaining material in a cyclone is then rinsed out with a stiff bristle brush and acetone. Both portions are then desiccated (the acetone is evaporated prior to desiccation). The filter is removed separately and is carefully placed into its original plastic Petri dish. All catches are then weighed after 24 hours of desiccation. All weighing is done on site with a four- or five-place Mettler balance with weights recorded to the nearest 0.1 milligram.

The contents of the condenser/drier are weighed to nearest 0.5 gram to determine the amount of water condensed.

References:

Methods 1, 2, 3, 4, and 5, Appendix A,
Reference Methods, New Source Performance
Standards, 40 CFR 60, revised 7/9/85

J. D. McCain et al, Procedures Manual for the Recommended ARB Sized Chemical Sampling Method (Cascade Cyclones). Attachment No. 2 to the Final Report for ARB Contract A3-092-32 "Recommended Methodology for the Determination of Particle Size Distribution in Ducted Sources". SoRI-EAS-86-467, May 1986. NTIS PB 86-218674/WEP.

Sample Name: **Multiple Metals and Particulates -- EPA**
Method 29

Process Location: Module E inlet and outlet and stack.

Equipment: Multiple metals sampling train; plastic Petri dish with tared particulate filter; 8 glass jars (500 ml) with Teflon-lined lids

Filters used by SRI are preweighed quartz fiber filters. Weights are obtained with a Mettler Model HK balance, or equivalent, after filters are desiccated to constant weight.

Collection Frequency: Sampling time will be in accordance with EPA procedures which require a minimum of 60 min of sampling to acquire a 1.25 m³ or greater sample. See Table 4-1 for specific times for M29 sampling for this program. One sample at stack and two samples at inlet and outlet of Scrubber Module E per test day.

Procedure Summary: Stack gas sampling equipment is calibrated no later than 60 days after last previous calibration. An initial traverse of the duct to be sampled is made with a pitot tube at each sample port following EPA Methods 1 and 2 to establish sample traverse points, gas velocity profile, temperature, and flow rate, and to check for cyclonic air flow. The sampling train is assembled with a tared particulate filter, 100 ml of 5% HNO₃/10% H₂O₂ in the first and second impingers, with the third and sixth impingers empty, 100 ml of 4% KMnO₄/10% H₂SO₄ in the fourth and fifth impingers, an empty seventh impinger, and 200-300 g of silica gel in a final impinger. EPA Method 5 procedures are followed for pre-test and post-test leak checks, isokinetic sampling rate, filter change-outs (if needed), and data recording. The impinger section of the sampling train is moved intact to the cleanup area for sample recovery as follows:

The particulate filter is removed from its holder, carefully placed into a 250 ml glass bottle and sealed with a teflon lined lid.

The internal surfaces of the nozzle, probe and front half of the filter holder are cleaned by rinsing and brushing with acetone, followed by a final rinsing with a 0.1 normal nitric acid solution into a separate sample jar (probe rinse sample).

The liquid contents of each impinger is measured to nearest milliliter to determine the amount of water condensed. After emptying the contents of impingers one through three into one or more sample bottles as needed, the back half of the filter holder, connecting glassware, and impingers one through three are thoroughly rinsed with 0.1 normal nitric acid. The rinsate is added to the liquid contents of the impingers. Small amounts of 12% hydroxylamine hydrochloride in 12% NaCl solution are added to each $H_2SO_4/KMnO_4$ impinger until color disappears. Then 5% potassium dichromate solution is added to the impinger until a distinct yellow color persists. Each $H_2SO_4/KMnO_4$ impinger solution is then poured into a precleaned, amber Nalgene bottle, into which a few drops of concentrated HNO_3 is added before sealing. The silica gel contents of the final impinger are recovered and weighed to the nearest 0.5 g to determine the amount of water collected.

Samples for analysis:

Acetone rinse of probe and front housing
Nitric acid rinse of probe and front housing
Filter
 HNO_3 impingers and rinse
 $H_2SO_4/KMnO_4$ impingers and rinse

References:

Methods 1, 2, 3, 4, and 5, Appendix A,
Reference Methods, New Source Performance
Standards, 40 CFR 60, revised July 1, 1991.

Methodology for the Determination of Metals Emissions in Exhaust Gases from Hazardous Waste Incinerator and Similar Combustion Processes. EPA Method 29 (tentative) -- pp 3-1 through 3-47, Methods Manual for Compliance with the BIF Regulations, EPA/530/SW-91-010, December 1990.

Sample Name: Acid Gases and Anions

Process Location: Inlet of Module E, outlets of Modules E and F, and stack.

Equipment: Method 5 sampling train; plastic Petri dish with tared particulate filter; 8 glass jars (500 ml) with Teflon-lined lids

Collection frequency: Sampling time will be 60 minutes at the inlet and 120 minutes at the scrubber outlets and stack. This reduced sampling time at the scrubber inlet results from the very high SO₂ concentration which would result in the exhaustion of the reagents in the impingers if longer sampling times were used.

Procedure summary: Stack gas sampling equipment is calibrated no later than 60 days after last calibration. An initial traverse is made with a pitot tube at each sample port following EPA Methods 1 and 2 to establish sample traverse points, gas velocity profile, temperature, and flow rate, and to check for cyclonic air flow. The sampling train is assembled with tared particulate filter, an empty first impinger, and 100 ml of a solution consisting of 25 g/l of sodium carbonate, 25 g/l of sodium bicarbonate, and 100 ml/l of 33% hydrogen peroxide in the second and third impingers. These are followed by a dry impinger and a final impinger loaded with 200 to 300 g of silica gel. Method 5 procedures are followed for pre-test and post-test leak checks, filter change-outs (if needed), and data recording. The impinger section of the sampling train is moved intact to the cleanup area for sample recovery as follows:

The particulate filter is removed from its holder, carefully placed in a 250 ml glass bottle which is sealed with a teflon lined lid.

The internal surfaces of the nozzle, probe and front half of the filter holder are cleaned by rinsing, brushing, and final rinsing with acetone into a separate sample jar (probe rinse sample).

The liquid contents of the impingers are measured to nearest milliliter to determine the amount of water condensed; the liquid contents

of the first three impingers are collected in a separate container and the back half of the filter holder, connecting glassware, and the impingers are thoroughly rinsed with distilled water. The rinsate is added to the sample jar(s) containing the impinger contents; the silica gel contents of the final impinger are recovered and weighed to the nearest 0.5 g to determine amount of water collected.

References:

**Methods 1, 2, 3, 4, and 5, Appendix A,
Reference Methods, New Source Performance
Standards, 40 CFR 60, revised July 1, 1991.**

**Isokinetic HCl/Cl₂ Emission Sampling Train
(Method 0050) – pp 3-70 through 3-96,
Methods Manual for Compliance with the BIF
Regulations, EPA/530-SW-91-010, December
1990.**

Sample Name: **Mercury -- EPA Method 101A (modified)**

Process Location: **Module E inlet, Modules E and F outlets, and stack.**

Equipment: **EPA Method 101A train with additional impingers; plastic Petri dish with tared particulate filter; 8 glass jars (500 ml) with Teflon-lined lids**

Filters used by SRI are preweighed quartz fiber filters. Weights are obtained with a Mettler Model HK balance, or equivalent, after filters are desiccated to constant weight.

Collection Frequency: **Sampling time will be in accordance with EPA procedures which require a minimum of 60 min of sampling to acquire a 1.25 m³ or greater sample. See Table 4-1 for specific times for the M101A sampling for this program.**

Procedure Summary: **Stack gas sampling equipment is calibrated no later than 60 days after last previous calibration. An initial traverse of the duct to be sampled is made with a pitot tube at each sample port following EPA Methods 1 and 2 to establish sample traverse points, gas velocity profile, temperature, and flow rate, and to check for cyclonic air flow. The sampling train is assembled with a tared particulate filter, 100 ml of a proprietary reagent in the first three impingers, 100 ml of 4% KMnO₄/10% H₂SO₄ in the fourth, fifth and sixth impingers, and 200-300 g of silica gel in a final impinger. EPA Method 5 procedures are followed for pre-test and post-test leak checks, isokinetic sampling rate, filter change-outs (if needed), and data recording. The impinger section of the sampling train is moved intact to the cleanup area for sample recovery as follows:**

The particulate filter is removed from its holder, carefully placed into a 250 ml glass bottle and sealed with a teflon lined lid.

The internal surfaces of the nozzle, probe and front half of the filter holder are cleaned by rinsing and brushing with acetone, followed by a

final rinsing with a 0.1 normal nitric acid solution into a separate sample jar (probe rinse sample).

The liquid contents of each impinger is measured to nearest milliliter to determine the amount of water condensed. Contents of each of impingers one through three are poured into separate, clean sample bottles. Connecting glassware, and each impinger is thoroughly rinsed with 10% nitric acid. The rinsate is added to the sample bottle containing the liquid contents of the impinger. Small amounts of 12% hydroxylamine hydrochloride in 12% NaCl solution are added to each $H_2SO_4/KMnO_4$ impinger until color disappears. Then 5% potassium dichromate solution is added to the impinger until a distinct yellow color persists. Each $H_2SO_4/KMnO_4$ impinger solution is then poured into a precleaned, amber Nalgene bottle, into which a few drops of concentrated HNO_3 is added before sealing. The silica gel contents of the final impinger are recovered and weighed to the nearest 0.5 g to determine the amount of water collected.

Samples for analysis:

Acetone rinse of probe and front housing
Nitric acid rinse of probe and front housing
Filter
Proprietary impingers and rinse
 $H_2SO_4/KMnO_4$ impingers and rinse

References:

Methods 1, 2, 3, 4, and 5, Appendix A,
Reference Methods, New Source Performance
Standards, 40 CFR 60, revised July 1, 1991.

Methodology for the Determination of Metals Emissions in Exhaust Gases from Hazardous Waste Incinerator and Similar Combustion Processes. EPA Method 101A. Manual for Compliance with the BIF Regulations, EPA/530/SW-91- 010, December 1990.

Curtis, Keith E., Personal Communication.

APPENDIX B

ANALYTICAL METHODOLOGY

B.1 Determination of Anions

For determinations of anions in limestone, magnetite, and slurry solids, 0.5-g portions of the solids were first fused with 6.7 g of solid sodium hydroxide. This procedure rendered most solids completely or almost completely soluble in water. After the fusion step, the resulting solidified cake was dissolved in about 350 mL of deionized water. The solution was filtered through Whatman No. 41 filter paper and diluted to 1 L. No preparation or treatment procedures (other than filtration through Whatman No. 41 filter paper) were used for plant-process liquids or for M5AT front washes and back-half samples; they were analyzed directly. M5AT front-half filters and particulate catches from the stack were extracted by combining each sample with 100 mL of deionized water and stirring with a Teflon-coated magnetic stir bar for 1 hr. This procedure always disintegrated the filter material. The resulting mixture was filtered through a Whatman No. 934 "angel hair" syringe filter pad to yield a clear extract. Analyses were then performed only on the extracts.

The anions chloride and sulfate were determined by ion chromatography (IC) with background-suppressed electrolytic conductivity detection. A Dionex Model 2000i/SP ion chromatograph was used for all IC analyses. The IC method was based on EPA Method 300.0 but did not follow this method exactly. The analytical separator column was a weak anion-exchange column with an alkyl quaternary amine functionality of moderate hydrophobicity. The eluent (3 mM NaHCO₃, 2.4 mM Na₂CO₃) was passed through the column at a flow rate of 2.4 mL/min. Samples were injected from a 150-mL Teflon sample loop. The lowest non-zero calibration standards for sulfate and chloride were, respectively, 0.2 and 0.1 mg/mL; these were very close to the detection threshold for the instrument. Each IC analysis was performed in duplicate, and the two measurement results were averaged.

Fluoride ion was determined by an ion-selective electrode (ISE) method that was adapted from EPA Method 340.2. We used a fluoride-selective ISE from Orion Research, Inc. To a 50-mL aliquot of sample solution in a plastic container, we added enough concentrated hydrochloric acid or sodium hydroxide to adjust the pH to within the range from 5 to 7. The solution was then diluted to 100 mL with a "low-level total ionic strength adjuster" solution, which was made as recommended by Orion.

We then proceeded with the known-addition method recommended by Orion. According to this method, known volume increments of a standard fluoride solution are added to the sample, and a measurement is made of the electrode response after each

standard addition. The blank electrode response was measured and subtracted from each raw sample response before performing any other calculations. An analyte concentration was calculated after each standard addition as described in the Orion procedure. We conducted a minimum of three standard additions for each sample, and we calculated a fluoride ion concentration from each of the three additions. However, we reported only the average of the measured fluoride ion concentrations for each sample.

B.2 Sample Preparation Procedures for Metals Determinations

B.2.1 Preparation of Solid Samples

For most solids and most metals, samples were digested by one of several microwave procedures. The most frequently used microwave digestion procedure for solids was a multi-step procedure based on the one recommended for coal digestions by CEM Corporation, vendor of the microwave oven, in their Application Note MS-6. In accordance with this procedure, a 0.1-g (or larger) specimen of each sample was placed in a Teflon digestion vessel along with 10 mL of concentrated nitric acid. A group of samples was then taken, in four stages, to a pressure of 160 lb/in² inside each vessel. The exact wattage setting of the oven depended on the sample contents and on the number of samples being digested simultaneously; a typical value for six samples was 315 watts. The total heating time for this first step in the digestion process was 85 min.

In the next step, 5 mL of concentrated hydrofluoric acid was first added to each sample. Although CEM Corporation's procedure also called for the addition of HCl at this point, this instruction was generally ignored to avoid subsequent volatilization losses of those elements that form volatile chlorides. Thus, after the addition of hydrofluoric acid, the samples were again heated in the oven, this time at about 380 watts for a total of 35 min (150 lb/in²) in a single-stage heating program. In the final step, each sample was combined with 30 mL of 5% (w/v) aqueous boric acid (to neutralize any excess hydrofluoric acid), and the samples were again heated, but at 630 watts for a total of 10 min (50 lb/in²). Just before this step, an aliquot of the sample solution was frequently removed for the purpose of determining boron in the sample.

For determinations of trace metals in the magnetite sample, we used a simpler microwave digestion that was based on a procedure recommended by CEM for digesting iron ore (CEM Application Note OS-21). In this procedure, a 1-g sample specimen was first combined with 8 mL of hydrochloric acid, 4 mL of hydrofluoric acid, 4 mL of nitric acid, and 4 mL of deionized water in a Teflon digestion vessel. The mixture was then microwaved in three stages to a final pressure of 150 lb/in². The nominal power setting was about 315 watts, and the total run time was 34 min.

There was some concern, for certain solid sample types, that determinations of major metals in these samples were likely to be affected adversely by the inability of the microwave digestion procedures to completely dissolve the samples. Therefore, the

decision was made to employ fusion with lithium borate to enhance the solubility of the samples. To carry out the lithium borate fusion, samples were mixed with a lithium borate flux at a 10:1 flux-to-sample ratio and heated to 1000 °C in a platinum crucible. The resulting melt was dissolved in a 3% (v/v) nitric acid quenching solution.

Solid samples to be analyzed for selenium were decomposed by a Carius furnace technique. Thus, a portion of each sample was first sealed in a glass tube to which nitric acid had been added. The sealed tube was inserted into an aluminum sleeve, and the assembly was placed in a Carius furnace at 300 °C for at least 8 hr. The tube was then removed from the furnace, cooled, and opened; its contents were transferred to a volumetric flask and brought to volume.

Mercury was determined initially in all solids by EPA Method 7471, which included a two-step water-bath (or hot-plate) digestion at 95 °C. Aqua regia was added to a sample specimen prior to the first heating step, which lasted 10 min. Potassium permanganate was then added until the solution retained a purple color for 15 min. After a second heating step lasting 30 min, a solution of hydroxylamine sulfate (or hydroxylamine hydrochloride) and sodium chloride was added, and the resulting mixture was brought to volume in a volumetric flask. Other method details were as given in the published method.

However, most solids were later subjected to the CEM Method MS-6 microwave digestion, and these digestates were then analyzed for mercury. It was felt that this digestion procedure yielded better recoveries of mercury than the Method 7471 digestion procedure.

B.2.2 Preparation of Liquid Samples

The liquid samples were prepared for metals analyses by the microwave-based method recommended in EPA Method 29 for digesting metals-train impinger liquids, by methods that were derived from EPA Method 3015 (SW-846), or (for mercury determinations) by EPA Method 7470 (SW-846).

In the microwave digestion procedures for liquids that are set forth in EPA Method 29 and in EPA Method 3015, an aliquot of the sample material is combined with nitric acid and heated in the microwave oven. For EPA Method 3015, the sample is then merely diluted in preparation for analysis. But in the EPA Method 29 approach, the sample mixture is further combined with hydrogen peroxide, heated again in the oven, diluted with hot water, heated once again in the oven, and finally diluted again prior to the analysis step. In our applications of these methods, solution volumes and other method details were generally as given in the published methods. Minor variations in the microwave oven settings were employed mainly to tailor the method to the particular oven being used and the specific samples being analyzed.

Digestions by EPA Method 7470 (for mercury analyses) were carried out by combining a sample aliquot with sulfuric acid, nitric acid, potassium permanganate, and potassium persulfate. The mixture was heated on a hot plate at 95 °C for 2 hr and then mixed with a solution of hydroxylamine sulfate (or hydroxylamine hydrochloride) and sodium chloride prior to analysis. Other experimental details were as given in the published method.

B.2.3 Preparation of Gas and Gas-Borne Solid Samples

The filter samples containing entrained solids that were collected during flue-gas sampling with MMTs were digested according to the microwave-based method recommended in EPA Method 29. This method calls for combining 0.5 g of solid sample material with 6 mL of nitric acid and 4 mL of hydrofluoric acid and heating the mixture for about 12 to 15 min in the microwave oven. During this work, however, the total sample weights were found to be as high as 5 g or more. Thus, each sample was divided into five or more 1-g specimens, which were then digested separately so as to reduce the entire sample to solution form. But some sample specimens did not completely dissolve during this process, a fact that once again raised questions about the accuracy of the major-metals determinations. Hence, these digestates were filtered and the collected residues were redigested prior to the metals determinations.

For determinations of most metals at SRI, the peroxide-containing MMT impinger solutions were prepared by the hot-plate digestion procedure of EPA Method 29. Thus, all of the available impinger sample was concentrated to about 20 mL by heating just below the boiling point on a hot plate. The resulting concentrated solution was mixed with nitric acid and heated for 30 min on a hot plate to just below boiling. Then a hydrogen peroxide solution was added and the mixture was heated for an additional 10 min. Finally, the sample was diluted, heated for another 20 min, cooled, filtered, and diluted in preparation for the analysis step. Experimental details can be found in EPA Method 29.

To conduct the microwave digestions mentioned in Section 5.4 in connection with MMT peroxide impinger solutions, GL used the microwave-based procedure given in EPA Method 29 as an alternative to hot-plate digestion for MMT impinger liquids. In this procedure, an aliquot of the sample was combined with nitric acid, heated for 6 min in the microwave oven, cooled, mixed with hydrogen peroxide, heated in the microwave oven for two more minutes, diluted with hot water, heated for an additional 5 min, cooled, filtered, and diluted. This same procedure was also used by GL for the digestion of M5AT impinger solutions for selenium determinations.

All train impinger fluids that were analyzed solely for mercury were analyzed by EPA Method 7470, which was carried out essentially as described above for liquid samples.

B.3 Analytical Methods for Metals Determinations

Samples were generally analyzed for all metals except mercury by inductively-coupled plasma atomic emission spectrometry (ICPAES). The ICPAES analysis conditions were essentially those given in EPA Method 6010 from SW-846. A variety of instruments and a variety of analytical wavelengths were used, each offering different detection limits and different degrees of freedom from interferences. Generally the most sensitive of the available emission wavelengths was used unless another wavelength had to be adopted to avoid an interference. Scandium and yttrium were employed as internal standards.

Arsenic, lead, and selenium were later re-determined in many samples by graphite-furnace atomic absorption spectrometry (GFAAS) as a means of lowering the detection limits for these metals. The GFAAS methods were essentially the same as those given in EPA Methods 200.9 for arsenic, 239.2 or 7121 (SW-846) for lead, and 7740 (SW-846) or 7741 (SW-846) for selenium. Mercury was determined in solids by EPA Method 7471 (SW-846) and in liquids by EPA Method 7470 (SW-846), both of which are based on cold-vapor atomic absorption spectrometry (CVAAS). Again, several instruments were used for each type of analysis; thus, detection limits varied. Stannous chloride was used as the reducing reagent for the production of elemental mercury vapor.

SRI's CVAAS instrument was also equipped for determinations by atomic fluorescence spectrometry (AFS), which provided somewhat lower detection limits than CVAAS. In the operation of this instrument, the mercury vapor released from the sample was swept first through the atomic-absorption cell and then through the atomic fluorescence cell. Hence, the instrument measured the mercury content of each sample essentially simultaneously by both methods. During this project, mercury concentrations obtained by CVAFS were reported in those situations where the mercury concentration in the sample was below the optimum CVAAS working concentration range for mercury, i.e., below about 200 ng/L in the digested liquid sample medium that was actually delivered to the instrument for analysis. The CVAFS detection limit for mercury on this instrument was typically about 10 ng/L in the sample solution being analyzed.

Although the identities of these last 12 samples and their analyte concentrations were not divulged to GLI beforehand, GLI was told that the samples were QC samples. Moreover, GLI was asked to prepare the impinger solutions for analysis by each of two strategies and to analyze each preparation in the usual way. One preparation strategy was to use the same EPA Method 29 hot-plate digestion (for elements other than mercury) and the same EPA Method 7470 hot-plate digestion (for mercury) used at Southern (see Section 5.4 and Appendix B). The other strategy was the alternative Method 29 microwave digestion that GLI performed on impinger samples of this type after they experienced problems with solution overheating during their attempts to perform the Method 7470 digestion (again, see Section 5.4 and Appendix B). Thus, we were able to carry out a direct comparison of the two sample-preparation techniques.

C.4 QA/QC Findings

C.4.1 Analysis Results for Audit Samples

Tables C-1 through C-3 contain the analysis results that were obtained at GLI and Southern for the field audit samples prepared by Advanced Technology Systems, Inc. Because the analyte-spike levels have not been furnished to us, we can offer no evaluation of these data. It should be noted, however, that the anions of interest in this project were found to have been spiked near or below the detection limits of our ion chromatograph (IC). Therefore, many of the anion data are of little or no value in gauging our attainment of the DQOs. In addition, the mercury audit spikes were several orders of magnitude too high, and these samples thus required extensive dilution prior to analysis. This dilution step may have introduced some extra error into the audit-sample analyses that would not have been present in the real-sample analyses. By the same token, the ability to work well above the detection limit for mercury may have actually diminished certain sources of error that could have affected some of the real-sample analyses. In this instance too, therefore, it may be difficult to use these data to make quantitative assessments of our performance on real samples.

C.4.2 Results of Mass Balance Calculations

Our mass-balance findings are discussed in detail in other sections of this report and are not repeated here. In general, however, most of our computed mass balances for most metals indicated reasonable agreement between the input side and the output side of the mass flow equation. There were some specific problem areas, most notably the general lack of close correspondence between the coal analyses and the analyses of samples collected downstream from the boiler. But again, these subjects are discussed in detail elsewhere in the report.

discrepancies that occur for some metals in Tables C-12 and C-13. As another possible explanation, it should be noted that GLI changed their coal-digestion procedure for these analyses. That is, for the coal analyses reported here, they used the three-stage microwave digestion derived from CEM Corporation's Application Note MS-6, rather than the lithium borate fusion used previously (see Section 5.4 and Appendix B). Hence, at least a portion of any discrepancies in the coal data could be due to deficiencies in one or the other sample-preparation method.

This explanation does not apply to the limestone analyses (Table C-13), for which the microwave digestion was used consistently throughout the project. Therefore, it may be worthwhile to point out that there are other potential explanations for the observed discrepancies in either sample type. For example, it is always possible (though not considered likely) that the metals distributions in the test coal and limestone samples were extremely heterogeneous, either naturally or because of contamination during handling. This circumstance could conceivably have led to large variations in analysis results from one analysis to the next. Still other discrepancy scenarios could be formulated, some based on human error. However, we cannot know with certainty exactly what caused the discrepancies.

Finally, GLI's results from the analyses of National Institute of Standards and Technology (NIST) 1633b fly ash (Table C-14) appear to be satisfactory for all elements. Determinations of metals in fly ash are expected to be more accurate than those in coal and limestone because the metals concentrations are relatively high in fly ash and because fly ash is easier to dissolve during the digestion step than coal.

C.4.4 Results of Analyses of Internal Matrix Spikes at Southern and GLI

One of the most important internal QC samples analyzed in Southern and GLI laboratories was the matrix spike. This QC sample was prepared by spiking (or fortifying) a typical real sample with each of the species of interest in the analysis. The spike levels were usually chosen to be at least roughly comparable to the natural analyte levels in the sample. Thus, most sample types were subjected to preliminary analyses to estimate the natural analyte concentrations prior to the preparation of matrix spikes. After analysis of the matrix spikes, recoveries of the spiked analytes were computed by subtracting the natural analyte content (as measured in the unspiked sample) from the total analyte content (as measured in the spiked sample). Matrix spikes are useful in uncovering several different types of error.

As stated above, our DQO for matrix spikes on this project was agreement to within $\pm 25\%$ of the expected value, i.e., recoveries of spiked analytes falling between 75% and 125%. For the vast majority of matrix spikes, this objective was met. In most cases where a value fell outside of this range, the sample was reanalyzed -- often with some change in the procedure -- until the spike recovery became satisfactory.

First, note in Tables C-6 and C-7 that GLI's EPA Method 29 microwave sample-preparation procedure for the H₂O₂-containing impinger fluid did, indeed, seem to yield inferior results for mercury relative to the hot-plate digestion procedure of EPA Methods 29 and 7470. Although only two data points were obtained here with each method, this finding did seem to confirm our previous conclusion that Southern's mercury measurements in H₂O₂-containing impinger media from test MMTs were more accurate than those submitted by GLI and that the reason for this was related to the sample-preparation procedures used in the respective laboratories. Thus, using Southern's exact sample volumes, dilution ratios, and handling procedures in the Method 7470 hot-plate digestion, GLI apparently was able to obtain satisfactory recoveries for mercury from these samples.

Recoveries of arsenic, antimony, and selenium from the H₂O₂-containing impinger solutions (Tables C-6 and C-7) were at least marginally acceptable by both methods. This finding is in marked contrast to the results from the first set of QC samples submitted to GLI by Southern (Table C-5), for which recoveries of these three elements were quite poor. Perhaps this outcome was, as suggested above, related to the generally lower spike levels used for the first set of samples, although this was not true specifically for arsenic. In any event, the data from the second set of QC solutions, although meager, do suggest that both the microwave approach and the hot-plate approach from EPA Method 29 may be at least potentially useful for determining these metals in H₂O₂-containing MMT impinger solutions. Furthermore, there appears to be no basis, among the data of Tables C-6 and C-7, for impugning the arsenic, antimony, and selenium results from the analyses by GLI of H₂O₂-containing MMT impinger solutions.

On examination of the data for the four reference coals (Tables C-8 through C-11), one sees that, although there were some isolated weak recoveries here and there, serious problems were encountered among these samples only for three elements: arsenic, molybdenum, and lead. (The molybdenum results, in particular, appeared to be systematically high.) And even for these three elements, not all analysis results were substandard. Because much the same trend was observed for each of the four reference coals, we concluded from these data that GLI's techniques for sample preparation and analysis, as used on this set of QC samples, probably were capable of yielding at least marginally accurate concentration readings in the test coal samples for all trace and major metals of interest except (possibly) arsenic, molybdenum, and lead.

But, when two test coal samples were re-analyzed by GLI as QC samples, there were substantial inconsistencies between those analysis results and the previous GLI analysis results for many of the trace and major metals that were determined (Table C-12). This same statement was also true for the two test limestone samples (Table C-13) that were analyzed as QC samples. One possible explanation for this finding is the fact that, in general, a single analysis result will deviate more from another single analysis result than from a good reference value, simply because the latter usually estimates the true analyte concentration more closely than any single analysis result does. But this explanation is not adequate, by itself, to explain the very large

**Table C-2. Results of the Analyses of MM101A Train
Audit Samples for Mercury**

Set No.	Found mercury levels, total μg			
	MM101A front-half wash	MM101A back-half wash	MM101A KCl impinger solution	MM101A KMnO ₄ impinger solution
1	480	952	743	1,006
2	496	983	934	1,007
3	438	1,155	963	1,017

Table C-1. Results of the Analyses of MMT Audit Samples

Met-al name	Analysis results, total μg											
	MMT filter			MMT front-half wash			MMT impinger solution ^a					
	Set 1	Set 2	Set 3	Set 1	Set 2	Set 3	Set 1	Set 2	Set 3	Set 1	Set 2	Set 3
As	21.5	31.3	39	50.6	60.4	52.6	162	14	142			
B	4.6	4.7	5.2	15.6	71.6	43.7	<55	<42	<62			
Ba	52.2	75	74.7	95	113	112	304	296	315			
Be	13.4	19.3	19.7	27.4	33.2	32.4	76.7	79.5	76.3			
Cd	9.44	14.4	15	25.4	30.4	29.8	73	70.9	76			
Co	<2.5	<2.5	<2.5	<0.8	<0.8	<0.8	<1.5	<1.2	<1.7			
Cr	65.6	96.2	96.6	123	149	147	374	379	392			
Cu	82.8	122	120	158	189	187	458	479	458			
Hg	<1 ^b	78.1 ^b	427 ^b	2.02	1.78	2.40	135 ^b	76.2 ^b	81 ^b			
Mn	50.9	72.8	71.8	93	110	110	311	300	323			
Mo	1.65	16.6	15.8	0.4	<2.2	<2.2	<0.8	<0.6	<0.9			
Ni	61.1	88.7	90.4	121	145	142	391	384	405			
Pb	7.15	10.05	10.1	12.6	16.3	158	40.2	40	42.9			
Sb	<7.2	<7.2	<7.2	18.2	21.4	20.4	44	30	47.2			
Se	<36	<36	36.3	33	80.2	39.1	119	103	148			
V	0.57	0.56	0.64	<0.32	0.4	<1.8	<3.0	23.2	<0.3			
Al	296	341	340	191	228	226	678	655	715			
Ca	3.3 ^c	4.3 ^c	4.2 ^c	5.8 ^c	6.8 ^c	6.7 ^c	15.3 ^c	16.1 ^c	17.8 ^c			
Fe	95.6	122	143	120	145	150	454	482	461			
Mg	19.2	19.3	20.5	3	3	2.96	<14	<11	<16			
Ti	2.3	2.5	3.1	0.54	0.6	1.48	2.39	2.04	2.46			

^aThe MMT impinger solution for which metals concentrations are provided here is the H_2O_2 -containing solution used in the upstream MMT impingers. However, three mercury audit spikes were also prepared and analyzed in the KMnO_4 -containing solution used in the downstream MMT impingers. The results of the analyses of these solutions for mercury were: 494 μg (Solution #1), 486 μg (Solution #2), and 504 μg (Solution #3).

^bThese numbers are given in units of ng.

^cThese numbers are given in units of mg.

Table C-4. Recoveries by GLI of Mercury From the First Set of Southern QC Samples

Southern Sample No.	Sample description	Found mercury concn, <u>µg/L</u>	Target mercury concn, <u>µg/L</u>	Mercury recovery, %
P1-SS-972	MM101A KCl solution blank	0.073	----	----
P1-SS-973	Spiked MM101A KCl solution #1	3.89	3.20	122
P1-SS-974	Spiked MM101A KMnO ₄ solution #1	4.84	4.30	113
P1-SS-975	Spiked MM101A KCl solution #2	1.85	1.50	123
P1-SS-976	Spiked MM101A KMnO ₄ solution #2	2.39	2.10	114
P1-SS-977	MM101A KMnO ₄ solution blank	0.322	----	----
P1-SS-978	MMT H ₂ O ₂ solution blank	0.192	----	----
P1-SS-979	MMT KMnO ₄ solution blank	0.122	----	----
P1-SS-980	Spiked MMT H ₂ O ₂ solution #1	0.881	5.00	18
P1-SS-981	Spiked MMT KMnO ₄ solution #1	4.13	3.20	129
P1-SS-982	Spiked MMT H ₂ O ₂ solution #2	0.452	2.00	23
P1-SS-983	Spiked MMT KMnO ₄ solution #2	2.08	1.60	130

Table C-3. Results of the Analyses of Audit-Spiked Filters for Anions

Sample ID	Analysis results, total μg		
	Fluoride ion	Chloride ion	Sulfate ion
Filter 1 (P1-AS-844)	<4	<10	24
Filter 2 (P1-AS-848)	<4	14	<20
Filter 3 (P1-AS-872)	<4	<10	<20
Blank	<4	<10	46

APPENDIX C

AUDITING AND QUALITY ASSURANCE/QUALITY CONTROL (QA/QC) DATA

C.1 QA Objectives

The QA objectives of the test program were:

- To meet reasonable data quality objectives for a task of this kind;
- To minimize the occurrence of error events, and to minimize the magnitudes of those errors that are inevitable;
- To identify and quantify any errors that do occur; and
- To document the steps taken to accomplish the above.

This appendix briefly discusses these objectives and the procedures employed to meet them, and it describes the extent of our success in meeting them.

C.2 Data Quality Objectives (DQOs)

No separate site-specific QA/QC Plan was assembled and approved for this test; instead, the QA/QC Plan for the previous field test under this contract (i.e., the Bailly test) was adopted for this purpose. Hence, our initial plan was to use the same DQOs for this test as were used for the Bailly test. But we eventually recognized a need to tie the DQOs more closely to the quality parameters that we actually expected to measure during the this project. Therefore, we made changes to the DQOs during the analytical work. To explain the new DQOs, it is first necessary to provide some background information and terminology pertaining to such data quality parameters as accuracy, precision, and bias.

Essentially all real measurements are affected to some degree by bias and imprecision. (Here we use the term "bias" to mean systematic error and the term "imprecision" to mean random error.) Hence, all measurements are inaccurate to some degree, because both bias and imprecision contribute to the inaccuracy of a measurement. In fact, a frequently used definition of inaccuracy is $I = B + nS$, where I is inaccuracy, B is bias, S is standard deviation, and n is the number of standard deviations above and below the mean measurement result that embraces $P\%$ of the measurement results when the results are normally distributed about their mean. The parameter P is often referred to as the "confidence level" or "significance level", and inaccuracies are usually quantified only with respect to a stated P value. In this expression for measurement inaccuracy, one readily sees that bias and imprecision affect inaccuracy in an additive fashion.

**Table C-5. Recoveries by GLI of Arsenic, Antimony, and Selenium
From the First Set of Southern QC Samples**

Southern <u>Sample No.</u>	<u>Sample description</u>	Metal <u>name</u>	Found metal <u>concn,</u> <u>µg/L</u>	Target metal <u>concn,</u> <u>µg/L</u>	Metal <u>recovery,</u> <u>%</u>
P1-SS-978	MMT H ₂ O ₂ solution blank	As	5.3	----	----
P1-SS-980	Spiked MMT H ₂ O ₂ solution #1	As	5.3	10.0	53
P1-SS-982	Spiked MMT H ₂ O ₂ solution #2	As	2.5	4.0	63
P1-SS-978	MMT H ₂ O ₂ solution blank	Sb	<29	----	----
P1-SS-980	Spiked MMT H ₂ O ₂ solution #1	Sb	38	5.0	760
P1-SS-982	Spiked MMT H ₂ O ₂ solution #2	Sb	37	2.0	1,850
P1-SS-978	MMT H ₂ O ₂ solution blank	Se	<7.1	----	----
P1-SS-980	Spiked MMT H ₂ O ₂ solution #1	Se	<7.0	10.0	?
P1-SS-982	Spiked MMT H ₂ O ₂ solution #2	Se	<6.8	4.0	?

Table C-6. Recoveries by GLI of Arsenic, Antimony, Selenium, and Mercury From the Second Set of Southern QC Samples After Sample Preparation by the EPA Method 29 Microwave Procedure

Southern Sample No.	Sample description	Metal name	Found metal concn, μg/L	Target metal concn, μg/L	Metal recovery, %
E-1035-114-5	MMT H ₂ O ₂ solution blank	As	<0.002	-----	-----
E-1035-114-4	Spiked MMT H ₂ O ₂ solution #1	As	0.0042	0.004	105
E-1035-114-6	Spiked MMT H ₂ O ₂ solution #2	As	0.0115	0.010	115
E-1035-114-5	MMT H ₂ O ₂ solution blank	Sb	<0.005	-----	-----
E-1035-114-4	Spiked MMT H ₂ O ₂ solution #1	Sb	0.054	0.050	108
E-1035-114-6	Spiked MMT H ₂ O ₂ solution #2	Sb	0.100	0.120	83
E-1035-114-5	MMT H ₂ O ₂ solution blank	Se	<0.002	-----	-----
E-1035-114-4	Spiked MMT H ₂ O ₂ solution #1	Se	0.0166	0.015	111
E-1035-114-6	Spiked MMT H ₂ O ₂ solution #2	Se	0.0401	0.040	100
E-1035-114-5	MMT H ₂ O ₂ solution blank	Hg	0.213 ^a	-----	-----
E-1035-114-4	Spiked MMT H ₂ O ₂ solution #1	Hg	0.468 ^a	2.00 ^a	23
E-1035-114-6	Spiked MMT H ₂ O ₂ solution #2	Hg	3.84 ^a	5.00 ^a	77

^aThese numbers are given in units of ng/L.

Table C-7. Recoveries by GLI of Arsenic, Antimony, Selenium, and Mercury From the Second Set of Southern QC Samples After Sample Preparation by the EPA Method 29/Method 7470 Hot-Plate Procedure

Southern Sample No.	Sample description	Metal name	Found metal concn, μg/L	Target metal concn, μg/L	Metal recovery, %
E-1035-114-5	MMT H ₂ O ₂ solution blank	As	<0.002	----	----
E-1035-114-4	Spiked MMT H ₂ O ₂ solution #1	As	0.0035	0.004	88
E-1035-114-6	Spiked MMT H ₂ O ₂ solution #2	As	0.0102	0.010	102
E-1035-114-5	MMT H ₂ O ₂ solution blank	Sb	<0.005	----	----
E-1035-114-4	Spiked MMT H ₂ O ₂ solution #1	Sb	0.058	0.050	116
E-1035-114-6	Spiked MMT H ₂ O ₂ solution #2	Sb	0.085	0.120	71
E-1035-114-5	MMT H ₂ O ₂ solution blank	Se	<0.002	----	----
E-1035-114-4	Spiked MMT H ₂ O ₂ solution #1	Se	0.0151	0.015	101
E-1035-114-6	Spiked MMT H ₂ O ₂ solution #2	Se	0.0375	0.040	94
E-1035-114-5	MMT H ₂ O ₂ solution blank	Hg	0.338 ^a	----	----
E-1035-114-4	Spiked MMT H ₂ O ₂ solution #1	Hg	1.98 ^a	2.00 ^a	99
E-1035-114-6	Spiked MMT H ₂ O ₂ solution #2	Hg	5.29 ^a	5.00 ^a	106

^aThese numbers are given in units of ng/L.

Table C-8. Recoveries by GLI of Trace and Major Metals From NIST 1632b Coal

Metal name	Found metal concn, μg/g	Reference metal concn, μg/g	Metal recovery, %
As	<0.61	3.72	---
B	--- ^a	--- ^a	---
Ba	78.0	67.5	116
Be	2.1	— ^a	---
Cd	<3.3	0.0573	---
Co	<6.6	2.29	---
Cr	11.3	(11) ^b	103
Cu	7.0	6.28	111
Hg	0.065	--- ^a	---
Mn	13.1	12.4	106
Mo	21.9	(0.9) ^b	2,433
Ni	7.0	6.10	115
Pb	6.7	3.67	183
Sb	<6.1	(0.24) ^b	---
Se	<11	1.29	---
V	16.5	--- ^a	---
Al	8,862	8,550	104
Ca	2,185	2,040	107
Fe	7,401	7,590	93
Mg	474	383	121
Ti	514	454	113

^aNot reported.

^b() = Advisory value.

**Table C-9. Recoveries by GLI of Trace and Major Metals From
Brammer SARM 20 Coal**

Metal name	Found metal concn, μg/g	Reference metal concn, μg/g	Metal recovery, %
As	0.92	4.7	20
B	---	---	---
Ba	345	372	93
Be	1.8	2.5	72
Cd	<3.4	---	---
Co	12.6	8.3	152
Cr	64.0	(67) ^b	96
Cu	17.2	18	96
Hg	0.269	0.25	108
Mn	72.9	80	91
Mo	93.8	---	---
Ni	18.4	25	74
Pb	31.6	26	122
Sb	<6.1	0.4	---
Se	<11	0.8	---
V	48.4	47	103
Al	56,100	59,700	94
Ca	13,200	13,360	99
Fe	7,881	8,183	96
Mg	2,669	2,580	103
Ti	3,633	3,800	96

^aNot reported.

^b() = Advisory value.

Table C-10. Recoveries by GLI of Trace and Major Metals From DOE Round Robin Coal "B"

Metal name	Found metal concn, μg/g	Reference metal concentration range ^a , μg/g	Metal recovery within range? (Yes/No)
As	2.4	1.2 - 5.3	yes
B	--- ^b	--- ^b	---
Ba	50.9	46 - 74	yes
Be	<2.0	1.3 - 1.9	---
Cd	<3.7	<0.3 - 1.0	---
Co	<7.3	3.0 - 4.6	---
Cr	35.1	31.1 - 36.4	yes
Cu	11.5	9.6 - (<42)	---
Hg	0.064	<0.1 - 0.13	---
Mn	39.1	35 - 40	yes
Mo	29.7	3 - (<14)	no
Ni	13.8	16.9 - 22.9	no
Pb	59.7	9.1 - 15.0	no
Sb	<6.8	0.7 - 2.6	---
Se	<11	--- ^b	---
V	48.9	38.8 - 50.7	yes
Al	12,100	--- ^b	---
Ca	3,377	--- ^b	---
Fe	14,900	--- ^b	---
Mg	865	--- ^b	---
Ti	717	--- ^b	---

^aThis column of the table gives the highest and lowest concentration values reported for each metal by the participating laboratories during the DOE round-robin exercise.

^bNot reported.

**Table C-11. Recoveries by GLI of Trace and Major Metals From
DOE Round Robin Coal "F"**

Metal name	Found metal concn, μg/g	Reference metal concentration range ^a , μg/g	Metal recovery within range? (Yes/No)
As	31.0	4.8 - 50.4	yes
B	--- ^b	--- ^b	---
Ba	83.3	55.4 - 98.1	yes
Be	2.4	1.9 - 2.8	yes
Cd	<3.0	0.07 - (<3)	---
Co	5.9	3.6 - 11.3	yes
Cr	20.0	11 - 29	yes
Cu	20.8	20 - (<38)	---
Hg	0.236	0.24 - 0.34	yes
Mn	30.7	16 - 27	no
Mo	31.8	3.6 - 7.4	no
Ni	20.0	22.0 - 29.8	no
Pb	19.4	11.5 - 15.7	no
Sb	<5.4	2.0 - 2.9	---
Se	<11	--- ^b	---
V	36.9	28.1 - 42.2	yes
Al	15,100	--- ^b	---
Ca	2,111	--- ^b	---
Fe	19,600	--- ^b	---
Mg	706	--- ^b	---
Ti	904	--- ^b	---

^aThis column of the table gives the highest and lowest concentration values reported for each metal by the participating laboratories during the DOE round-robin exercise.

^bNot reported.

Table C-12. Determination by GLI of Trace and Major Metals in Two Test Coal Samples

Metal name	Belt coal sample ^a			Raw coal sample ^b		
	Previous found metal concn, <u>μg/g</u>	Latest found metal concn, <u>μg/g</u>	Relative percent difference ^c , %	Previous found metal concn, <u>μg/g</u>	Latest found metal concn, <u>μg/g</u>	Relative percent difference ^c , %
As	3.5	8.2	80			
B	105.7	d	---			
Ba	70.4	110	44	120	76.4	44
Be	2.2	2.9	27	1.4	2.9	70
Cd	35.1	<3.5	---	30.7	<3.6	---
Co	<2.8	<6.9	---	5.1	11.1	74
Cr	17.9	29.5	49	30.5	30.4	0
Cu	8.2	15.2	60	19.9	14.7	30
Hg	105 ^e	162 ^e	43	184 ^e	112 ^e	49
Mn	53.8	61.8	14	62.0	48.3	25
Mo	30.5	47.6	44	37.8	39.8	5
Ni	53.6	17.1	103	18.3	13.1	33
Pb	6.5	15.9	84	18.2	12.5	37
Sb	19.9	<6.3	---	51.4	<6.5	---
Se	<1.1	<11	---	<1.1	<11	---
V	50.3	90.7	57	95.2	90.8	5
Al	10,700	18,300	52	20,600	14,200	37
Ca	1,450	3,154	74	3,350	2,048	48
Fe	13,800	27,700	67	27,900	15,900	55
Mg	608	1,469	83	1,350	1,080	22
Ti	619	1,081	54	1,122	842	29

^aThis sample of washed coal was collected from the conveyor belt feeding Unit 1 of the test plant. It is listed elsewhere in the report as Southern Sample No. 50330.

^bThis sample of raw coal was collected from the test coal washing plant on October 24, 1994. It is listed elsewhere in the report as Southern Sample No. P1-RC-697.

^cThe relative percent difference is the difference between the previous found concentration and the latest found concentration, expressed as a percentage of the average of the two found concentrations.

^dNot reported.

^eThese numbers are given in units of ng/g.

Table C-13. Determination by GLI of Trace and Major Metals in Two Test Limestone Samples

Metal name	Limestone P2-LS-778-780 ^a			Limestone P3-LS-784-786 ^b		
	Previous found metal concn, <u>µg/g</u>	Latest found metal concn, <u>µg/g</u>	Relative percent difference ^c , %	Previous found metal concn, <u>µg/g</u>	Latest found metal concn, <u>µg/g</u>	Relative percent difference ^c , %
	As	0.8	<0.7	1.2	<0.6	---
B	---	---	---	---	---	---
Ba	27.9	33.5	18	54.7	53.1	3
Be	<0.7	2.0	---	<0.7	1.8	---
Cd	1.0	<3.6	---	1.0	<3.2	---
Co	10.2	<7.1	---	10.2	<6.3	---
Cr	4.8	3.9	21	4.6	6.2	30
Cu	158	551	111	146	150	3
Hg	1.9 ^e	4 ^e	71	<2.0 ^e	7 ^e	---
Mn	75.9	69.9	8	71.6	69.1	4
Mo	<3.5	19.4	---	<3.6	20.0	---
Ni	3.3	1.6	69	3.1	2.1	38
Pb	13.4	39.7	99	13.6	14.8	8
Sb	<6.9	<6.6	---	<7.1	<5.4	---
Se	<1.1	<11	---	<1.1	<11	---
V	2.4	3.9	48	2.4	3.8	45
Al	549	1,153	71	532	1,398	90
Ca	380 ^f	386 ^f	2	395 ^f	382 ^f	3
Fe	977	1,144	16	951	1,188	22
Mg	13,400	13,700	2	14,300	14,300	0
Ti	2.0	68	189	2.0	76	190

^aThis sample of limestone was collected on the afternoon of October 26, 1994. The number shown in the heading is Southern's sample number for this sample.

^bThis sample of limestone was collected on the afternoon of October 27, 1994. The number shown in the heading is Southern's sample number for this sample.

^cThe relative percent difference is the difference between the previous found concentration and the latest found concentration, expressed as a percentage of the average of the two found concentrations.

^dNot reported.

^eThese numbers are given in units of ng/g.

^fThese numbers are given in units of mg/g.

Table C-14. Recoveries by GLI of Trace and Major Metals From NIST 1633b Fly Ash

Metal name	Found metal concn, μg/g	Reference metal concn, μg/g	Metal recovery, %
As	128	136.2	94
B	--- ^a	--- ^a	---
Ba	635	709	90
Be	13.3	--- ^a	---
Cd	<3.3	0.784	---
Co	49.6	(50) ^b	99
Cr	181	198.2	91
Cu	105	112.8	93
Hg	0.161	0.141 ^a	114
Mn	125	131.8	95
Mo	286	--- ^a	---
Ni	113	120.6	94
Pb	73.5	68.2	108
Sb	<5.9	(6) ^b	---
Se	<11	10.26	---
V	296	295.7	100
Al	151,600	150,500	101
Ca	15,300	15,100	101
Fe	75,600	77,800	97
Mg	5,062	4,820	105
Ti	7,760	7,910	98

^aNot reported.

^b() = Advisory value.

Unit 1 Boiler Data
Table 1 of 6

Description	OUTLET OF HTRS 6B	OUTLET OF HTRS 5A	OUTLET OF HTRS 5B	DR CLR DRAINS	DR CLR DRAINS	HTR DRAINS	DA IN °F								
Units	°F	°F	°F	°F	°F	°F	°F	°F	°F	°F	°F	°F	°F	°F	°F
10/26/94 18:00	271	299	118	116	116	163	162	227	216	270	270	275	276	276	300
10/26/94 19:00	271	299	118	117	163	163	227	216	271	271	276	276	277	277	301
10/26/94 20:00	270	299	118	117	163	163	227	216	270	271	276	276	277	277	300
10/26/94 20:52															
10/26/94 21:00	271	299	118	117	163	163	227	216	270	271	276	276	277	277	301
10/26/94 22:00	271	299	118	116	164	163	226	216	270	271	276	276	277	277	301
10/26/94 23:00	271	299	118	117	164	163	227	216	271	271	276	276	276	276	300
10/27/94 0:00	271	299	118	116	163	163	227	216	270	271	276	276	276	276	300
10/27/94 1:00	270	298	118	116	164	163	227	216	270	271	276	276	276	276	300
10/27/94 2:00	270	298	118	117	163	162	226	216	270	270	276	276	276	276	300
10/27/94 3:00	270	298	118	117	163	162	226	216	270	270	276	276	276	276	299
10/27/94 4:00	270	298	118	117	163	162	226	216	270	270	276	276	276	276	300
10/27/94 5:00	270	298	118	117	163	162	226	216	270	270	276	276	275	275	299
10/27/94 6:00	270	298	118	117	163	162	226	216	270	270	275	275	276	276	299
10/27/94 6:00	270	299	118	117	163	162	226	215	270	270	276	276	276	276	300
10/27/94 6:30															
10/27/94 9:00	271	299	118	117	163	162	226	216	270	270	276	276	276	276	300
10/27/94 10:00	271	299	118	117	163	163	226	216	270	270	276	276	276	276	300
10/27/94 11:00	270	299	118	117	163	163	226	216	270	271	276	276	276	276	300
10/27/94 12:00	270	298	118	116	163	163	226	216	270	270	276	276	276	276	300
10/27/94 13:00	270	299	118	117	163	163	226	216	270	270	275	275	276	276	300
10/27/94 14:00	270	298	118	116	163	163	226	216	270	270	276	276	276	276	300
10/27/94 15:00	271	299	118	116	163	163	226	216	270	270	276	276	276	276	300
10/27/94 16:00	270	298	118	117	164	163	226	216	270	270	276	276	276	276	300
10/27/94 17:00	270	298	118	115	165	164	225	216	270	270	276	276	276	276	299
10/27/94 18:00	270	298	118	115	166	164	225	215	270	270	275	275	276	276	299
10/27/94 19:00	270	298	118	115	167	165	225	215	270	270	275	275	276	276	299
10/27/94 19:33															
10/27/94 20:00	270	297	120	115	167	166	225	214	270	270	275	275	276	276	299
10/27/94 21:00	270	298	118	119	167	166	224	214	270	270	275	275	276	276	299
10/27/94 22:00	270	297	119	115	167	165	225	214	270	270	275	275	276	276	299
10/27/94 23:00	270	298	119	115	167	165	225	215	270	270	276	276	276	276	299
10/28/94 0:00	270	298	119	115	167	165	225	215	270	270	275	275	276	276	300
10/28/94 1:00															
10/28/94 2:00	272	298	301	119	167	165	225	215	272	272	275	275	276	276	299
10/28/94 3:00	270	298	298	119	165	167	225	215	270	270	277	277	276	276	299
10/28/94 4:00	270	298	298	118	165	167	225	215	270	270	280	280	276	276	299
10/28/94 5:00	270	298	298	116	166	165	225	215	270	270	276	276	275	275	299
10/28/94 6:00	270	297	297	118	166	165	225	214	270	270	276	276	275	275	299
10/28/94 7:00	270	298	298	118	167	165	225	215	270	270	276	276	275	275	299
10/28/94 8:00	270	298	298	118	167	165	225	215	270	270	277	277	275	275	299
10/28/94 8:20															
10/28/94 9:00	270	298	118	115	167	165	225	215	270	270	277	277	276	276	299

Unit 1 Boiler Data
Table 1 of 6

Description	OUTLET OF HTRS 6B	OUTLET OF HTRS 5A	OUTLET OF HTRS OF HTRS 5B	DR CLR DRAINS LVG A	DR CLR DRAINS LVG B	HTR DRAINS LVG 8A	HTR DRAINS LVG 8B	HTR DRAINS LVG 7A	HTR DRAINS LVG 7B	HTR DRAINS LVG 6A	HTR DRAINS LVG 6B	HTR DRAINS LVG 5A	HTR DRAINS LVG 5B	DA IN °F
Units	°F	°F	°F	°F	°F	°F	°F	°F	°F	°F	°F	°F	°F	°F
102894 10:00	270	297	297	118	115	167	165	225	215	170	270	276	275	298
102894 11:00	270	297	297	118	115	168	165	225	215	167	270	276	275	298
102894 12:00	270	297	297	119	115	167	165	225	215	163	270	276	275	298
102894 13:00	270	298	298	119	115	167	165	225	215	160	270	277	276	298
102894 14:00	270	298	298	119	116	167	166	225	215	157	270	277	276	298
102894 15:00	270	298	298	119	116	167	165	225	215	153	270	277	276	298
102894 16:00	271	298	298	119	116	167	165	225	215	150	270	277	276	298
102894 17:00	270	298	298	119	116	167	165	225	215	147	270	277	276	298
102894 17:44														
102894 18:00	270	298	298	119	116	167	165	225	215	145	270	277	276	298
102894 19:00	270	298	298	119	116	167	165	225	215	142	270	276	276	298
102894 20:00	270	297	297	118	115	167	165	224	214	140	269	276	275	297
102894 21:00	270	297	297	118	116	167	165	225	215	137	270	276	275	298
102894 22:00	270	297	298	119	115	167	165	225	215	135	270	277	275	298
102894 23:00	270	297	297	119	115	167	165	224	215	133	269	276	275	298
102994 0:00	270	297	297	119	115	167	165	225	214	131	270	276	275	298

Unit 1 Boiler Data
Table 1 of 6

Description	GEN LOAD A	GEN LOAD B	Total Load	STO TANK	LVG HW		HTR DRAIN COOLER		HTR DRAIN COOLER		INLET TO HTRS 8A	OUTLET TO HTRS 8B	INLET TO HTRS 8B	OUTLET TO HTRS 7B	INLET TO HTRS 7B	OUTLET TO HTRS 6A	INLET TO HTRS 6A	OUTLET OF HTRS 6A
					°F	°F	°F	°F	°F	°F								
Units	MW	MW	MW	MW	100	105	105	105	105	105	113	134	136	168	216	215	216	270
102894 10:00	334	320	654	654	100	105	105	105	105	105	114	112	134	168	216	215	216	270
102894 11:00	334	320	654	654	100	105	105	105	105	105	114	112	134	168	216	215	216	270
102894 12:00	333	320	653	653	100	105	105	105	105	105	115	113	134	169	216	215	216	270
102894 13:00	334	321	655	655	100	105	105	105	105	105	115	113	134	169	217	216	216	270
102894 14:00	335	320	655	655	101	105	105	105	105	105	115	113	134	169	216	216	216	270
102894 15:00	335	319	654	654	101	105	105	105	105	105	115	113	135	169	217	216	216	270
102894 16:00	335	320	655	655	101	105	105	105	105	105	115	113	135	169	217	216	216	270
102894 17:00	334	319	653	653	101	105	105	105	105	105	115	113	134	169	217	215	216	270
102894 17:44																		
102894 18:00	334	319	653	653	101	105	105	105	105	105	115	113	134	169	217	215	216	270
102894 19:00	334	318	652	652	101	105	105	105	105	105	115	113	134	168	216	216	216	270
102894 20:00	331	313	644	644	102	105	105	105	105	105	115	113	134	168	215	215	215	269
102894 21:00	333	317	650	650	101	105	105	105	105	105	115	113	134	169	216	216	215	270
102894 22:00	334	317	651	651	101	105	105	105	105	105	115	113	134	168	216	216	215	270
102894 23:00	333	316	649	649	102	105	105	105	105	105	115	113	134	166	216	215	215	270
102894 0:00	333	317	650	650	102	105	105	105	105	105	115	113	134	168	216	215	215	269

Unit 1 Boiler Data
Table 1 of 6

Description	OUTLET OF HTRS	OUTLET OF HTRS	DR CLR	DR CLR	HTR DRAINS	DA IN									
Units	6B	5A	LVG A	LVG B	LVG BA	LVG BB	LVG 7A	LVG 7B	LVG 6A	LVG 6B	LVG 5A	LVG 5B	LVG 5A	LVG 5B	°F
1025/94 1:00	265	292	291	113	112	160	158	222	210	264	264	270	270	270	293
1025/94 2:00	265	292	292	114	112	160	159	223	211	265	264	270	270	270	293
1025/94 3:00	269	297	297	116	115	163	161	226	213	269	269	274	274	274	299
1025/94 4:00	269	297	298	116	115	163	161	226	214	269	268	274	274	274	298
1025/94 5:00	270	298	298	117	116	163	162	228	215	270	270	276	276	275	299
1025/94 6:00	271	300	300	117	118	164	162	228	215	271	271	277	277	276	301
1025/94 7:00	271	300	300	118	116	164	162	229	215	271	271	277	277	276	301
1025/94 8:00	271	299	299	117	116	164	162	228	215	271	270	278	278	276	301
1025/94 9:00	271	299	299	117	116	164	162	228	215	270	270	276	276	276	300
1025/94 9:20															
1025/94 10:00	271	299	298	117	116	164	162	228	215	270	270	276	276	276	300
1025/94 11:00	271	298	298	116	116	164	162	228	215	270	270	276	276	276	300
1025/94 12:00	271	299	299	118	116	164	162	228	215	270	270	276	276	276	300
1025/94 13:00	271	298	299	118	117	164	162	228	215	270	270	276	276	275	300
1025/94 14:00	271	299	299	118	118	164	163	228	216	271	271	276	276	276	300
1025/94 15:00	271	300	300	118	117	164	163	229	216	271	271	277	277	277	301
1025/94 16:00	271	299	299	119	117	164	162	228	215	271	271	276	276	276	300
1025/94 17:00	271	299	299	118	117	164	162	228	216	271	271	276	276	276	300
1025/94 18:00	271	299	299	118	117	164	162	228	216	270	271	276	277	277	300
1025/94 19:00	270	299	299	118	118	164	162	228	215	270	270	276	276	276	299
1025/94 20:00	271	299	299	118	117	164	162	228	215	271	270	276	276	276	300
1025/94 20:47															
1025/94 21:00	271	299	299	118	117	164	162	228	215	271	271	276	276	276	300
1025/94 22:00	271	299	299	118	116	164	162	228	215	271	270	276	276	276	300
1025/94 23:00	271	299	299	118	116	164	162	228	215	270	270	276	276	276	300
1026/94 0:00	270	299	299	118	116	164	162	228	215	270	270	276	276	276	300
1026/94 1:00	270	298	298	117	116	163	161	228	214	270	269	275	275	275	299
1026/94 2:00	268	295	294	115	114	162	160	228	213	267	267	272	272	273	298
1026/94 3:00	268	293	293	114	113	161	159	224	212	266	266	271	271	271	294
1026/94 4:00	268	293	293	115	113	161	159	224	211	265	266	271	271	271	294
1026/94 5:00	269	297	297	117	115	163	161	227	214	269	269	274	274	274	298
1026/94 6:00	270	299	299	118	116	164	162	228	215	270	270	276	276	276	300
1026/94 7:00	270	298	298	117	116	163	162	227	215	270	270	276	276	275	299
1026/94 8:00	271	299	299	117	116	164	162	228	215	270	271	277	277	276	300
1026/94 8:12															
1026/94 9:00	271	300	299	117	116	164	162	228	215	270	271	277	277	276	300
1026/94 10:00	271	299	299	118	115	164	163	227	216	271	270	276	276	276	300
1026/94 11:00	271	299	299	117	116	163	162	228	215	270	270	276	276	276	300
1026/94 12:00	270	298	298	117	115	164	162	227	216	270	270	275	275	276	299
1026/94 13:00	271	299	299	117	116	164	162	228	216	270	271	276	276	276	300
1026/94 14:00	271	299	299	117	116	164	162	227	216	270	270	276	276	276	300
1026/94 15:00	271	299	299	118	116	164	163	227	216	270	270	276	276	276	300
1026/94 16:00	271	299	299	118	116	164	163	227	216	271	271	276	276	276	300
1026/94 17:00	270	299	299	118	116	163	163	227	216	270	270	276	276	276	300

Unit 1 Boiler Data
Table 1 of 6

Description		GEN LOAD A	GEN LOAD B	Total Load	STO TNK	LVG HW ES	LVG HW W/S	HTR DRAIN COOLER IN	HTR DRAIN COOLER OUT A	HTR DRAIN COOLER OUT B	Inlet To HTRS 8A	Outlet To HTRS 8B	Inlet To HTRS 8A	Outlet To HTRS 8B	Inlet To HTRS 7A	Outlet To HTRS 7B	Inlet To HTRS 6A	Outlet To HTRS 6B	Inlet °F	To HTRS °F	Outlet °F	Outlet °F	Inlet °F	To HTRS °F	Outlet °F	Outlet °F
MW	MW	MW	MW	MW	°F	°F	°F	°F	°F	°F	°F	°F	°F	°F	°F	°F	°F	°F	°F	°F	°F	°F	°F	°F	°F	
Units		102594 1:00	310	595	100	103	103	107	112	111	119	120	164	180	214	212	212	212	212	212	212	212	212	212	264	
		102594 2:00	313	289	602	100	103	107	112	111	120	120	164	180	214	212	212	212	212	212	212	212	212	212	212	285
		102594 3:00	330	307	637	100	105	105	109	114	113	122	167	163	217	215	216	215	215	215	215	215	215	215	215	269
		102594 4:00	328	307	635	100	105	105	109	114	112	123	168	162	217	215	216	215	216	215	216	215	216	215	216	268
		102594 5:00	334	317	651	99	108	108	110	115	113	122	123	167	163	218	216	216	216	216	216	216	216	216	216	270
		102594 6:00	337	320	657	100	108	107	111	115	114	123	123	168	184	218	217	217	217	217	217	217	217	217	217	271
		102594 7:00	337	319	658	100	108	108	110	115	114	123	124	168	184	219	216	217	217	217	217	217	217	217	217	271
		102594 8:00	335	318	653	99	106	106	110	115	114	122	123	168	184	218	216	217	217	217	217	217	217	217	217	270
		102594 9:00	335	318	653	99	106	106	110	115	114	122	123	168	184	218	216	217	217	217	217	217	217	217	217	270
		102594 9:20																								
		102594 10:00	334	318	652	99	106	106	110	115	114	122	123	167	163	218	216	217	217	217	217	217	217	217	217	270
		102594 11:00	334	318	652	99	106	106	110	115	114	122	123	168	184	218	216	217	217	217	217	217	217	217	217	270
		102594 12:00	334	319	653	99	106	106	110	115	114	123	123	168	184	218	216	217	217	217	217	217	217	217	217	270
		102594 13:00	333	318	651	99	106	106	110	115	113	122	124	167	163	218	216	216	216	216	216	216	216	216	216	270
		102594 14:00	334	318	652	99	106	106	110	115	114	122	124	168	184	218	216	217	217	217	217	217	217	217	217	270
		102594 15:00	335	318	653	99	107	107	111	115	114	123	124	168	184	219	216	217	217	217	217	217	217	217	217	271
		102594 16:00	334	318	652	99	107	107	110	116	114	123	124	168	184	218	216	217	217	217	217	217	217	217	217	270
		102594 17:00	334	318	652	99	106	106	111	115	114	123	124	168	184	218	216	217	217	217	217	217	217	217	217	271
		102594 18:00	334	319	653	99	106	106	111	115	114	123	124	168	184	218	216	217	217	217	217	217	217	217	217	270
		102594 19:00	334	318	652	99	106	106	110	115	114	123	123	168	184	218	216	217	217	217	217	217	217	217	217	270
		102594 20:00	334	319	653	99	106	107	111	115	114	123	124	168	184	218	216	217	217	217	217	217	217	217	217	270
		102594 20:47																								
		102594 21:00	334	319	653	99	107	106	110	115	114	123	124	168	184	218	216	217	217	217	217	217	217	217	217	270
		102594 22:00	335	318	653	99	106	106	111	115	114	123	124	168	184	218	216	217	217	217	217	217	217	217	217	270
		102594 23:00	334	318	652	99	106	106	110	115	114	122	124	168	184	218	216	217	217	217	217	217	217	217	217	270
		102694 0:00	334	318	652	99	106	106	110	115	114	122	123	168	184	218	216	217	217	217	217	217	217	217	217	269
		102694 1:00	331	314	645	98	106	106	110	115	113	122	123	167	183	218	215	215	215	215	215	215	215	215	215	267
		102694 2:00	322	301	623	98	104	104	108	113	112	121	122	165	182	218	214	214	214	214	214	214	214	214	214	267
		102694 3:00	319	294	613	98	104	103	107	112	111	119	121	165	181	215	213	213	213	213	213	213	213	213	213	266
		102694 4:00	316	292	608	99	103	103	107	112	111	120	120	165	181	214	213	213	213	213	213	213	213	213	213	266
		102694 5:00	331	313	644	98	105	105	109	114	113	121	122	166	182	217	215	215	215	215	215	215	215	215	215	269
		102694 6:00	334	319	653	98	106	106	110	115	114	122	123	167	183	218	216	216	216	216	216	216	216	216	216	270
		102694 7:00	331	315	646	98	106	105	109	115	113	122	123	167	183	218	216	216	216	216	216	216	216	216	216	270
		102694 8:00	335	318	653	98	106	106	110	115	114	122	123	168	183	218	216	217	217	217	217	217	217	217	217	270
		102694 9:12																								
		102694 9:00	334	318	652	98	106	106	110	115	113	124	124	166	184	218	217	217	217	217	217	217	217	217	217	270
		102694 10:00	334	318	652	98	105	106	110	115	113	124	125	166	184	217	217	217	217	217	217	217	217	217	217	270
		102694 11:00	334	318	652	98	106	106	110	115	113	124	125	166	184	217	217	217	217	217	217	217	217	217	217	269
		102694 12:00	333	316	651	98	105	106	109	115	113	124	125	167	184	217	217	217	217	217	217	217	217	217	217	269
		102694 13:00	334	319	653	98	106	106	110	115	113	124	125	166	184	218	217	217	217	217	217	217	217	217	217	270
		102694 14:00	334	319	653	98	106	106	110	115	113	124	125	166	184	218	217	217	217	217	217	217	217	217	217	270
		102694 15:00	334	319	651	98	106	106	110	115	113	124	125	166	184	218	217	217	217	217	217	217	217	217	217	270
		102694 16:00	335	318	653	98	106	106	110	115	113	124	125	166	184	218	217	217	217	217	217	217	217	217	217	270
		102694 17:00	334	315	649	98	106	106	110	115	113	124	125	166	184	218	217	217	217	217	217	217	217	217	217	270
		102694 18:00	334	315	646	98	106	105	109	114	113	124	125	166	184	218	217	217	217	217	217	217	217	217	217	270
		102694 19:00	331	311	644	98	105	105	109	114	113	124	125	166	184	218	217	217	217	217	217	217	217	217	217	270
		102694 20:00	334	319	653	98	106	106	110	115	113	124	125	166	184	218	217	217	217	217	217	217	217	217	217	270
		102694 21:00	334	318	652	98	106	106	110	115	113	124	125	166	184	218	217	217	217	217	217	217	217	217	217	270
		102694 22:00	335	318	653	98	106	106	110	115	113	124	125	166	184	218	217	217	217	217	217	217	217	217	217	270
		102694 23:00	334	318	652	98	106	106	110	115	113	124	125	166	184	218	217	217	217	217	217	217	217	217	217	270
		102694 0:00	334	318	652	98	106	106	110	115	113	124	125	166	184	218	217	217	217	217	217	217	217	217	217	269
		102694 1:00	331	314	645	98	106	106	110	115	113	124	125	166	184	218	217	217	217	217	217	217	217	217	217	267
		102694 2:00	322	301	623	98	104	104	108	113	112	121	122	165	182											

Unit 1 Boiler Data
Table 1 of 6

Description	GEN LOAD A	GEN LOAD B	Total Load	LGV	HW	LS	HTR DRAIN	HTR COOLER	Inlet	OUTLET TO HTRS 8A	OUTLET TO HTRS 8B	OUTLET TO HTRS 7A	OUTLET TO HTRS 7B	INLET TO HTRS 6A	OUTLET TO HTRS 6B
				STO TNK	HW ES	WS	COOLER OUT A	COOLER OUT B	°F						
Units	MW	MW	MW	98	98	108	110	115	114	124	125	167	184	217	216
1027/94 18:00	334	316	650	98	98	108	110	115	114	124	125	168	184	217	216
1027/94 19:00	335	318	653	98	108	108	110	115	114	124	125	167	184	217	217
1027/94 20:00	335	318	653	97	108	108	110	115	113	124	125	167	184	218	216
1027/94 20:52															
1027/94 21:00	334	318	652	98	108	108	110	115	114	124	126	168	184	218	217
1027/94 22:00	334	318	652	97	108	108	110	115	114	124	125	169	184	217	216
1027/94 23:00	335	317	652	98	107	108	110	116	114	124	126	168	185	218	217
1027/94 0:00	335	318	653	98	108	108	110	115	114	124	125	168	185	217	217
1027/94 1:00	334	317	651	97	108	108	110	115	114	124	125	167	184	217	216
1027/94 2:00	333	315	640	97	105	105	109	114	113	123	124	167	184	217	216
1027/94 3:00	334	316	650	97	105	105	109	114	113	123	125	167	184	217	216
1027/94 4:00	332	315	647	97	105	105	109	114	113	123	124	167	183	218	215
1027/94 5:00	333	319	652	97	105	105	109	114	112	123	124	167	184	217	216
1027/94 6:00	333	319	652	97	105	105	109	114	113	123	124	167	184	217	216
1027/94 6:00	335	318	653	97	105	105	109	114	113	123	124	167	184	217	216
1027/94 6:30															
1027/94 9:00	334	318	652	97	105	105	109	114	113	123	124	167	184	217	217
1027/94 10:00	334	318	652	97	105	105	109	114	113	123	124	168	184	217	216
1027/94 11:00	334	319	653	97	105	105	109	114	113	123	125	168	184	218	217
1027/94 12:00	334	319	653	97	105	105	109	114	113	123	124	167	184	217	217
1027/94 13:00	334	319	653	98	105	105	110	114	113	124	124	167	184	217	217
1027/94 14:00	334	319	653	97	105	105	110	114	113	123	124	167	184	217	216
1027/94 15:00	333	317	650	97	105	105	110	114	113	124	124	167	184	217	216
1027/94 16:00	333	317	650	97	105	105	109	115	113	124	126	168	184	217	216
1027/94 17:00	333	317	650	97	105	105	109	115	113	126	129	167	185	218	216
1027/94 18:00	333	317	650	97	105	105	109	115	113	130	131	168	185	218	215
1027/94 19:00	333	319	652	98	105	105	109	115	113	134	136	168	186	218	216
1027/94 19:33															
1027/94 20:00	333	317	650	98	105	105	109	115	113	136	140	169	187	215	215
1027/94 21:00	334	318	652	98	105	105	109	115	113	136	140	169	187	216	215
1027/94 22:00	334	319	651	99	105	105	109	115	113	136	138	169	187	215	215
1027/94 23:00	336	319	655	99	105	105	110	115	113	134	136	169	187	216	216
1028/94 0:00	335	319	654	99	105	105	109	115	112	134	136	168	186	216	215
1028/94 1:00	334	317	651	99	105	105	109	115	112	135	136	169	187	216	215
1028/94 2:00	337	319	656	100	106	110	115	115	113	134	136	169	187	216	216
1028/94 3:00	335	318	653	100	105	105	109	115	113	134	136	169	187	216	216
1028/94 4:00	336	318	654	100	105	105	109	115	113	134	136	169	187	216	216
1028/94 5:00	335	320	655	100	105	105	109	115	112	134	136	168	186	216	215
1028/94 6:00	334	320	654	99	105	105	109	115	112	134	136	168	186	216	215
1028/94 7:00	335	321	656	100	105	105	109	115	112	134	136	169	187	216	216
1028/94 8:00	335	320	655	100	105	105	109	115	112	134	136	168	186	216	216
1028/94 8:20															
1028/94 9:00	335	320	655	100	105	105	109	114	112	134	136	169	187	216	216

APPENDIX D
PLANT OPERATING DATA

D.1	Unit 1 Boiler System Data.....	D-2
D.2	Unit 1 Scrubber System Data	D-44
D.3	Unit 1 Continuous Emissions Monitor Data	D-73

Unit 1 Boiler Data
Table 2 of 6

Description	FLASH EVAP DST °F	FLASH EVAP M-U °F	BFW BSTR INLET SUCT °F	INLET TO HTRS 3A °F	OUTLET OF HTRS 3B °F	OUTLET OF HTRS 3A °F	OUTLET OF HTRS 3B °F	OUTLET OF HTRS 2A °F	OUTLET OF HTRS 2B °F	OUTLET OF HTRS 1A °F	OUTLET OF HTRS 1B °F	OUTLET OF HTRS 1B °F	HTR DRAINS LVG 3A °F	HTR DRAINS LVG 3B °F	HTR DRAINS LVG 2A °F	HTR DRAINS LVG 2B °F
Units																
10/26/94 21:00	121	74	344	351	351	387	387	457	458	522	518	363	362	403	400	
10/26/94 22:00	121	73	344	351	351	387	387	457	458	522	519	363	363	403	400	
10/26/94 23:00	120	72	343	351	350	387	387	458	458	523	519	364	363	403	400	
10/27/94 0:00	120	70	343	350	350	386	386	458	458	523	518	363	362	402	400	
10/27/94 1:00	120	69	342	350	349	385	385	455	455	522	517	362	401	399		
10/27/94 2:00	119	69	342	349	349	385	385	455	454	521	517	362	401	398		
10/27/94 3:00	119	68	343	350	350	386	386	456	456	522	517	363	362	402	399	
10/27/94 4:00	118	68	341	348	349	384	384	455	455	521	516	361	361	400	397	
10/27/94 5:00	119	67	341	348	348	383	384	455	454	522	517	361	360	400	397	
10/27/94 6:00	118	67	341	348	348	384	384	455	455	522	517	361	360	400	397	
10/27/94 8:00	118	68	344	351	351	387	387	457	457	523	518	363	363	403	400	
10/27/94 9:00	119	68	344	351	351	387	387	457	458	523	518	363	363	403	400	
10/27/94 10:00	119	69	343	350	350	386	386	457	455	523	517	363	362	402	399	
10/27/94 11:00	120	71	343	350	350	386	386	458	458	523	517	363	362	402	399	
10/27/94 12:00	120	72	342	350	350	385	385	456	456	522	517	362	362	401	399	
10/27/94 13:00	120	73	343	350	349	385	385	456	456	522	517	362	361	401	398	
10/27/94 14:00	121	74	342	349	349	385	385	456	455	522	517	362	361	401	398	
10/27/94 15:00	121	74	342	350	349	385	385	456	455	522	517	362	361	401	398	
10/27/94 16:00	122	74	342	349	349	385	385	456	455	522	517	361	361	401	398	
10/27/94 17:00	126	73	342	349	349	384	385	456	455	522	517	361	361	400	398	
10/27/94 18:00	128	72	341	348	348	384	384	455	455	521	517	361	361	400	397	
10/27/94 19:00	132	73	341	349	349	384	384	456	456	522	517	361	360	400	397	
10/27/94 20:00	137	74	341	348	348	383	383	456	455	522	518	361	361	400	396	
10/27/94 21:00	137	73	341	348	348	384	384	456	455	523	517	361	361	400	397	
10/27/94 22:00	135	74	341	348	348	383	383	456	456	523	517	361	360	400	397	
10/27/94 23:00	132	72	342	349	349	385	385	456	456	523	517	362	361	401	398	
10/28/94 0:00	132	71	342	349	349	385	385	456	455	523	517	362	361	401	398	
10/28/94 5:00	131	71	341	348	348	384	384	456	455	522	518	360	360	399	397	
10/28/94 1:00	131	71	340	347	347	382	382	456	455	522	518	359	359	398	396	
10/28/94 2:00	132	71	337	344	343	382	382	456	455	522	516	359	359	398	396	
10/28/94 3:00	132	69	341	349	348	384	384	456	456	523	516	360	360	400	397	
10/28/94 4:00	131	69	341	349	348	384	384	456	455	523	516	360	360	400	397	
10/28/94 9:00	131	69	342	348	348	384	384	456	455	523	516	361	360	399	397	
10/28/94 10:00	132	71	340	347	347	382	382	456	455	522	516	360	359	398	396	
10/28/94 11:00	132	72	349	346	346	381	381	456	455	523	516	361	360	400	397	
10/28/94 12:00	133	74	340	347	347	382	382	456	456	523	516	360	360	400	397	
10/28/94 13:00	134	75	341	348	348	383	383	457	456	523	516	360	360	399	397	
10/28/94 14:00	134	76	341	348	348	383	383	457	456	523	516	361	360	400	397	
10/28/94 15:00	134	76	341	349	349	384	384	456	456	523	516	361	360	400	397	
10/28/94 16:00	134	76	342	349	349	384	384	456	456	522	516	360	360	399	397	
10/28/94 17:00	134	76	341	348	348	383	383	456	455	522	516	360	360	399	397	

Unit 1 Boiler Data
Table 2 of 6

Description	FLASH EVAP DST °F	FLASH EVAP M-U °F	BFW BSTR PUMP SUCT °F	INLET TO HTRS 3A °F	OUTLET OF HTRS 3B °F	OUTLET OF HTRS 3A °F	OUTLET OF HTRS 2A °F	OUTLET OF HTRS 1B °F	OUTLET OF HTRS 1A °F	HTR DRAINS LVG 3A °F	HTR DRAINS LVG 3B °F	HTR DRAINS LVG 2A °F	HTR DRAINS LVG 2B °F
Units													
102894 18:00	134	76	340	348	347	383	456	455	522	516	360	360	399
102894 19:00	134	76	341	348	348	383	456	455	522	516	360	360	399
102894 20:00	133	75	340	347	347	382	455	454	521	515	359	359	395
102894 21:00	133	75	340	347	347	382	456	455	522	516	359	359	398
102894 22:00	133	75	341	348	347	383	456	455	522	516	361	361	399
102894 23:00	133	73	340	348	347	383	456	455	522	515	360	359	398
102994 0:00	133	73	340	347	347	382	456	455	522	515	359	360	398

Unit 1 Boiler Data
Table 2 of 6

Description	HTR DRAINS LVG 1A °F	HTR DRAINS LVG 1B °F	ECON IN °F	CONDENSER COOLING WATER IN °F	CONDENSER COOLING WATER OUTLET NW °F	CONDENSER COOLING WATER OUTLET SE °F	CONDENSER COOLING WATER DISCH U-1 °F	CONDENSER COOLING WATER DISCH U-2 °F	CONDENSER COOLING WATER SW °F
1025/94 1:00	460	465	513	64	92	91	89	92	62.7
1025/94 2:00	462	466	514	64	92	92	89	91	62.7
1025/94 3:00	468	469	519	64	94	94	91	91	62.6
1025/94 4:00	467	468	518	64	94	93	91	91	62.6
1025/94 5:00	470	470	521	64	94	94	91	91	62.5
1025/94 6:00	471	471	522	64	95	94	92	91	62.4
1025/94 7:00	472	471	522	64	95	94	92	91	62.4
1025/94 8:00	471	471	521	64	95	94	92	91	62.3
1025/94 9:00	471	471	521	64	94	94	91	91	62.3
1025/94 10:00	471	471	521	64	94	94	91	91	62.2
1025/94 11:00	471	471	521	64	94	94	91	91	62.3
1025/94 12:00	471	471	521	64	95	94	91	91	62.3
1025/94 13:00	471	471	521	64	95	94	91	91	62.4
1025/94 14:00	471	471	521	64	95	95	92	92	62.4
1025/94 15:00	472	471	522	64	95	95	92	92	62.5
1025/94 16:00	471	471	521	64	95	95	92	92	62.5
1025/94 17:00	471	471	521	64	95	94	92	92	62.5
1025/94 18:00	471	471	521	64	95	94	92	92	62.4
1025/94 19:00	471	471	521	64	95	94	92	92	62.5
1025/94 20:00	471	471	521	64	95	94	92	92	62.5
1025/94 21:00	471	471	521	64	95	94	92	92	62.5
1025/94 22:00	471	471	521	64	95	94	92	92	62.5
1025/94 23:00	471	470	521	64	95	94	92	92	62.4
1026/94 0:00	471	470	521	64	95	94	92	92	62.4
1026/94 1:00	470	469	520	64	94	94	91	91	62.3
1026/94 2:00	466	466	517	64	93	93	90	91	62.2
1026/94 3:00	484	464	515	63	92	92	89	91	62.1
1026/94 4:00	463	464	514	63	92	92	89	91	62.0
1026/94 5:00	469	469	519	63	93	93	90	90	61.9
1026/94 6:00	471	470	520	63	94	94	91	90	61.8
1026/94 7:00	471	469	520	63	94	94	91	90	61.8
1026/94 8:00	472	470	520	63	94	93	91	90	61.7
1026/94 9:00	472	470	521	63	94	93	91	91	61.6
1026/94 10:00	471	470	520	63	94	93	91	91	61.6
1026/94 11:00	471	469	520	63	94	94	91	91	61.7
1026/94 12:00	471	469	520	63	94	94	91	91	61.8
1026/94 13:00	471	470	520	63	94	93	91	91	61.6
1026/94 14:00	471	470	520	63	94	94	91	93	61.7
1026/94 15:00	471	469	520	63	94	94	91	92	61.7
1026/94 16:00	471	469	520	63	94	94	91	91	61.8
1026/94 17:00	471	469	520	63	94	94	91	91	61.8
1026/94 18:00	471	469	520	63	94	94	91	91	61.7
1026/94 19:00	472	469	520	63	94	94	91	91	61.7
1026/94 20:00	472	469	520	63	94	94	91	91	61.7

Unit 1 Boiler Data
Table 2 of 6

Description	HTR DRAINS LGV 1A °F	HTR DRAINS LGV 1B °F	ECON IN °F	CONDENSER COOLING WATER IN °F	CONDENSER COOLING WATER OUTLET NW °F	CONDENSER COOLING WATER OUTLET SE °F	CONDENSER COOLING WATER DISCH U-1 °F	CONDENSER COOLING WATER DISCH U-2 °F	CONDENSER COOLING WATER SW °F
Units	471	469	520	63	94	93	91	91	61.7
1026/94 21:00	472	469	520	63	94	93	91	91	61.6
1026/94 22:00	472	469	520	63	94	93	91	91	61.5
1026/94 23:00	472	469	520	63	94	93	91	91	61.4
1027/94 0:00	471	469	520	63	94	93	90	90	61.3
1027/94 1:00	471	468	519	63	94	93	90	90	61.2
1027/94 2:00	470	468	519	63	93	93	90	90	61.1
1027/94 3:00	471	468	519	62	93	93	90	90	61.0
1027/94 4:00	470	467	518	62	93	92	90	90	60.9
1027/94 5:00	470	468	519	62	93	92	90	90	60.8
1027/94 6:00	470	468	519	62	93	92	89	90	60.7
1027/94 8:00	472	469	519	62	93	92	90	90	60.7
1027/94 9:00	472	469	519	62	93	92	89	90	60.6
1027/94 10:00	471	469	519	62	93	92	89	90	60.6
1027/94 11:00	471	469	519	62	93	92	89	90	60.6
1027/94 12:00	471	469	519	62	93	92	89	90	60.7
1027/94 13:00	471	468	519	62	93	92	89	90	60.7
1027/94 14:00	471	468	519	62	93	92	90	90	60.8
1027/94 15:00	471	468	519	62	93	92	90	90	60.9
1027/94 16:00	470	468	519	62	93	92	90	90	60.8
1027/94 17:00	471	468	519	62	93	92	90	90	60.8
1027/94 18:00	470	468	519	62	93	92	90	90	60.8
1027/94 19:00	471	468	519	62	93	92	90	90	60.8
1027/94 20:00	471	469	519	62	93	92	90	90	60.8
1027/94 21:00	471	468	519	62	93	92	90	90	60.8
1027/94 22:00	471	468	519	62	93	92	90	90	60.7
1027/94 23:00	472	468	519	62	93	92	90	90	60.7
1028/94 0:00	471	468	519	62	93	92	90	90	60.8
1028/94 1:00	471	467	519	62	92	92	89	89	60.5
1028/94 2:00	471	467	519	62	93	92	90	90	60.4
1028/94 3:00	471	467	519	62	92	92	89	89	60.3
1028/94 4:00	471	467	519	61	92	92	89	89	60.2
1028/94 5:00	471	467	519	61	92	92	89	89	60.1
1028/94 6:00	471	467	518	61	92	91	89	89	60.1
1028/94 7:00	471	467	519	61	92	91	89	89	60.0
1028/94 8:00	471	467	519	61	92	92	89	89	60.0
1028/94 13:00	471	468	519	61	93	92	89	89	60.1
1028/94 14:00	471	468	519	62	93	92	89	89	60.2
1028/94 15:00	471	467	519	62	93	92	89	89	60.3
1028/94 16:00	471	467	519	62	93	92	90	90	60.3
1028/94 17:00	471	467	518	62	93	92	90	90	60.3

Unit 1 Boiler Data
Table 2 of 6

Description	HTR DRAINS LVG 1A °F	HTR DRAINS LVG 1B °F	ECON IN °F	CONDENSER COOLING WATER IN °F	CONDENSER COOLING WATER OUTLET NW °F	CONDENSER COOLING WATER OUTLET SE °F	CONDENSER COOLING WATER DISCH U-1 °F	CONDENSER COOLING WATER DISCH U-2 °F	CONDENSER COOLING WATER SW °F
Units									
102894 18:00	471	467	518	62	93	92	90	61	60.3
102894 19:00	470	467	518	62	93	92	89	61	60.3
102894 20:00	469	466	517	62	92	91	89	61	60.3
102894 21:00	470	467	518	62	92	92	89	61	60.3
102894 22:00	471	467	518	62	92	92	89	60	60.2
102894 23:00	470	466	518	61	92	92	89	60	60.2
102894 0:00	470	467	518	61	92	91	89	60	60.1

Unit 1 Boiler Data
Table 3 of 6

Description	OUT SIDE AIR TEMP °F	AIR ENT FD FANS A/B	AIR ENT FD FANS C/D	AIR ENT PREHTR A	AIR ENT PREHTR B	AIR ENT PREHTR C	AIR ENT PREHTR D	AIR LGV PREHTR UP SEC RS	AIR LGV PREHTR UP SEC LS	AIR TO WIND BOX RS	AIR TO WIND BOX LS	GAS ENT PREHTR UP SEC RS	GAS ENT PREHTR UP SEC LS	GAS LGV PREHTR LOWER SEC A °F
102594 1.00	49	87	86	160	164	162	161	594	608	549	567	670	663	336
102594 2.00	48	85	84	159	162	161	160	595	608	550	569	673	669	335
102594 3.00	46	84	83	159	163	160	159	589	615	560	576	681	675	339
102594 4.00	46	84	83	158	163	161	160	584	609	558	571	679	669	338
102594 5.00	46	84	82	158	160	159	159	587	609	551	569	675	666	338
102594 6.00	44	83	81	155	159	160	158	580	602	545	562	672	661	335
102594 7.00	43	83	81	155	159	159	158	576	602	544	562	671	663	333
102594 8.00	42	82	80	154	158	158	156	577	580	605	545	564	674	667
102594 9.00	44	82	80	154	158	158	157	584	609	549	568	679	672	334
102594 10.00	46	83	80	155	158	157	156	588	613	552	572	682	674	338
102594 11.00	49	83	81	156	159	157	156	592	618	558	577	685	677	338
102594 12.00	52	85	82	158	161	159	158	594	622	559	581	696	680	339
102594 13.00	54	86	82	160	165	161	159	591	625	569	586	687	682	341
102594 14.00	56	87	84	162	166	160	159	583	624	592	588	688	682	338
102594 15.00	57	88	84	160	184	158	158	584	621	590	585	698	676	338
102594 16.00	57	89	85	160	164	161	160	586	623	595	587	690	680	339
102594 17.00	56	89	86	160	164	162	161	586	626	600	589	691	679	338
102594 18.00	55	89	86	160	164	162	161	587	627	602	590	692	682	338
102594 19.00	53	88	86	160	164	161	161	588	631	604	592	693	685	337
102594 20.00	50	88	85	160	163	161	161	599	632	607	595	695	687	337
102594 21.00	49	87	85	159	163	162	161	599	632	609	597	693	688	338
102594 22.00	47	87	85	159	161	161	160	587	630	607	594	691	684	337
102594 23.00	46	88	83	158	161	162	160	588	623	582	585	687	680	337
102594 0.00	45	85	83	159	162	162	161	594	626	579	587	691	687	339
102594 1.00	44	85	82	159	162	160	159	589	625	592	587	690	684	338
102594 2.00	42	84	82	157	161	161	160	592	621	587	581	684	682	337
102594 3.00	41	83	81	155	158	164	164	584	612	593	556	575	681	676
102594 4.00	41	85	83	157	160	164	163	590	611	554	570	680	676	335
102594 5.00	39	86	83	157	160	165	163	590	612	554	572	679	678	337
102594 6.00	38	86	84	158	160	166	164	585	608	551	587	675	668	336
102594 7.00	37	86	85	158	161	164	163	582	608	548	566	674	669	335
102594 8.00	36	86	84	157	161	164	164	585	609	550	568	675	672	336
102594 9.00	39	85	83	157	161	162	161	596	612	551	571	678	676	337
102594 10.00	42	84	81	158	159	162	159	589	616	553	574	680	679	337
102594 11.00	46	83	81	158	159	161	159	591	618	555	577	681	682	338
102594 12.00	47	83	81	155	159	161	159	593	619	557	578	684	682	338
102594 13.00	48	84	81	156	159	158	156	595	621	558	582	685	694	340
102594 14.00	50	84	81	158	160	157	156	596	621	560	582	686	683	340
102694 15.00	52	84	82	158	163	158	156	590	620	567	583	688	680	340
102694 16.00	53	85	83	159	163	160	159	591	620	563	581	686	679	338
102694 17.00	52	86	84	160	164	162	160	596	618	562	580	680	676	338
102694 18.00	51	88	87	162	165	165	163	587	620	564	581	680	680	337
102694 19.00	50	91	91	165	169	166	164	576	622	592	586	682	682	336
102694 20.00	47	92	92	165	169	166	165	577	625	597	590	683	687	336

Unit 1 Boiler Data
Table 3 of 6

Description	OUT SIDE AIR TEMP °F	AIR ENT FD FANS C/D °F	AIR ENT PREHTR A °F	AIR ENT PREHTR B °F	AIR ENT PREHTR C °F	AIR ENT PREHTR D °F	AIR LGV UP SEC RS °F	AIR LGV UP SEC LS °F	AIR TO WIND BOX RS °F	AIR TO WIND BOX LS °F	AIR TO WIND BOX LS °F	GAS ENT UP SEC RS °F	GAS ENT UP SEC LS °F	GAS LGV PREHTR LOWER SEC A °F
Units														
102894 21:00	46	94	93	164	168	165	165	579	628	589	592	684	693	337
102894 22:00	43	94	93	163	167	185	164	591	629	602	594	687	692	338
102894 23:00	42	94	92	162	185	184	164	591	628	601	592	687	687	338
102794 0:00	39	93	91	162	184	162	163	584	624	602	589	693	687	339
102794 1:00	37	92	90	161	184	163	162	587	624	603	589	695	687	340
102794 2:00	35	91	89	160	182	162	162	587	623	603	586	691	685	339
102794 3:00	34	90	88	160	183	163	161	592	617	579	581	682	681	338
102794 4:00	33	90	87	161	184	163	161	584	610	557	572	677	671	338
102794 5:00	32	89	87	159	161	161	160	580	603	546	585	671	662	336
102794 6:00	32	88	86	158	159	160	159	583	604	548	588	676	666	337
102794 8:00	32	87	85	155	159	159	158	594	606	549	587	677	668	337
102794 9:00	36	87	84	155	159	159	158	597	610	552	572	678	672	338
102794 10:00	41	88	85	157	161	159	158	597	613	555	576	681	673	342
102794 11:00	46	91	87	159	163	158	158	591	617	567	581	683	678	343
102794 12:00	50	92	90	161	184	159	160	589	617	602	588	690	681	342
102794 13:00	52	94	90	163	187	161	161	582	619	594	585	698	681	343
102794 14:00	59	95	92	165	188	162	162	579	620	598	587	696	679	341
102794 15:00	60	97	93	165	189	161	163	575	616	595	583	692	675	340
102794 16:00	61	98	94	163	188	158	161	581	620	594	586	698	677	342
102794 17:00	59	98	95	163	167	158	161	581	622	602	589	690	679	342
102794 18:00	57	99	95	164	168	159	162	582	625	605	592	690	683	343
102794 19:00	54	99	95	164	168	159	163	585	627	607	595	693	687	343
102794 20:00	50	99	94	164	167	158	162	585	628	608	595	694	686	344
102794 21:00	47	98	93	163	167	157	161	582	619	605	588	692	679	343
102794 22:00	45	97	92	162	185	158	159	583	620	608	588	693	679	342
102794 23:00	43	98	91	161	184	155	159	580	617	602	585	689	678	341
102894 0:00	41	96	91	161	183	159	161	584	618	593	583	696	679	341
102894 1:00	39	95	91	160	182	160	161	588	620	595	585	694	680	342
102894 2:00	38	94	90	161	184	160	161	582	621	599	587	694	680	341
102894 3:00	37	93	90	161	185	164	163	583	623	598	587	686	684	340
102894 4:00	37	93	90	161	184	163	163	583	620	593	584	685	683	340
102894 5:00	36	93	89	160	184	163	162	588	617	551	569	680	671	339
102894 6:00	37	92	89	159	163	162	162	585	610	593	574	680	673	341
102894 7:00	36	92	89	157	161	161	161	584	604	551	567	675	684	340
102894 8:00	36	91	88	156	160	160	160	594	604	549	566	676	685	338
102894 9:00	40	91	88	157	160	160	160	586	607	551	569	680	671	339
102894 10:00	47	92	88	157	161	158	158	591	612	558	574	684	675	342
102894 11:00	55	95	91	160	163	160	161	593	616	584	578	685	678	345
102894 12:00	59	97	94	162	185	163	160	593	618	594	585	686	676	344
102894 13:00	62	100	98	163	185	165	162	593	620	601	587	691	680	345
102894 14:00	66	101	98	162	184	160	163	591	618	601	586	689	678	344
102894 15:00	67	102	99	162	183	161	161	584	620	599	586	687	680	345
102894 16:00	67	103	101	163	182	160	160	585	622	603	589	689	691	346
102894 17:00	66	103	101	163	182	160	160	586	623	607	591	691	682	346

Unit 1 Boiler Data
Table 3 of 6

Description	OUT SIDE AIR TEMP	AIR ENT FD FANS A/B	AIR ENT FD FANS C/D	AIR ENT PREHTR A	AIR ENT PREHTR B	AIR ENT PREHTR C	AIR ENT PREHTR D	AIR LGV PREHTR UP SEC RS	AIR LGV PREHTR UP SEC LS	AIR TO WIND BOX RS	AIR TO WIND BOX LS	GAS ENT PREHTR UP SEC RS	GAS ENT PREHTR UP SEC LS	GAS LGV PREHTR LOWER SEC A
Units	°F	°F	°F	°F	°F	°F	°F	°F	°F	°F	°F	°F	°F	°F
102894 16:00	65	104	101	163	164	162	167	587	624	609	592	693	685	346
102894 19:00	63	104	101	163	164	162	166	586	622	608	590	693	680	347
102894 20:00	61	104	100	163	164	161	165	581	617	603	585	689	678	344
102894 21:00	58	103	100	162	163	160	165	585	620	604	587	692	682	345
102894 22:00	57	103	98	161	162	160	164	584	621	606	588	692	678	345
102894 23:00	55	102	98	162	162	159	163	584	621	606	588	694	679	345
102894 0:00	55	102	97	161	161	159	163	587	623	608	589	695	682	344

Unit 1 Boiler Data

Description	GAS LGV PREHETR LOWER SEC B	GAS LGV PREHETR LOWER SEC C	GAS LGV PREHETR LOWER SEC D	STK GAS TMP	MS STOP VA A	NO 1 EXT	RH TO BLR	RH STOP VA A	BFP TURB EXTR A NO	BFP TURB EXTR B NO	BFP TURB EXTR A NO	BFP TURB EXTR B NO	BFP TURB EXTR A NO	BFP TURB EXTR B NO
	"F	"F	"F	"F	"F	"F	"F	"F	"F	"F	"F	"F	"F	"F
Units														
102594 1:00	303	316	334	171	1019	775	623	977	503	515	412	411	411	326
102594 2:00	303	317	333	170	1019	777	625	977	506	517	413	414	414	328
102594 3:00	307	321	337	168	1019	789	632	982	525	529	425	428	428	334
102594 4:00	305	318	334	168	1017	784	629	1000	515	523	419	420	420	330
102594 5:00	305	320	335	164	1019	795	637	1011	525	532	425	429	429	336
102594 6:00	302	318	334	165	1019	798	638	1008	533	536	430	435	435	340
102594 7:00	299	315	332	165	1019	797	638	999	534	537	432	435	435	340
102594 8:00	299	315	331	164	1018	795	637	997	532	535	430	434	434	338
102594 9:00	299	316	331	160	1017	794	637	1004	530	533	428	432	432	337
102594 10:00	301	316	333	159	1019	795	637	1009	527	533	426	430	430	336
102594 11:00	303	319	335	161	1019	795	639	1002	528	534	427	431	431	337
102594 12:00	306	322	337	158	1018	794	638	1003	527	533	428	431	431	338
102594 13:00	307	323	339	154	1019	794	638	1000	527	533	428	430	430	336
102594 14:00	307	320	337	153	1019	798	639	990	531	535	429	433	433	336
102594 15:00	305	318	336	153	1017	798	638	986	533	536	430	434	434	339
102594 16:00	306	320	337	146	1018	798	638	992	532	535	429	433	433	338
102594 17:00	306	320	337	151	1018	795	638	994	532	535	429	434	434	338
102594 18:00	306	320	337	149	1018	795	638	997	532	534	429	433	433	338
102594 19:00	306	321	337	148	1018	794	638	1001	530	533	427	431	431	337
102594 20:00	306	322	339	149	1019	795	639	994	531	535	429	433	433	338
102594 21:00	308	322	339	147	1017	794	637	996	530	534	428	432	432	337
102594 22:00	305	321	339	145	1019	798	639	990	533	536	430	434	434	339
102594 23:00	304	321	337	149	1017	795	637	989	532	534	429	433	433	338
102694 0:00	306	323	339	153	1018	794	638	997	530	533	427	432	432	337
102694 1:00	305	321	338	158	1018	791	635	992	525	530	425	428	428	335
102694 2:00	304	319	336	157	1017	781	628	983	510	520	416	417	417	328
102694 3:00	302	320	336	154	1020	780	627	974	508	519	415	416	416	327
102694 4:00	302	320	336	151	1017	776	625	975	505	517	412	413	413	324
102694 5:00	305	324	339	152	1018	789	634	1007	522	528	422	426	426	333
102694 6:00	305	324	340	152	1018	794	637	1008	531	534	428	432	432	337
102694 7:00	302	321	337	153	1019	793	637	999	530	533	428	431	431	337
102694 8:00	303	321	338	152	1018	798	638	991	534	537	431	435	435	340
102694 9:00	303	320	337	151	1018	795	638	991	532	535	429	433	433	338
102694 10:00	303	319	336	151	1019	795	638	994	529	534	427	431	431	338
102694 11:00	303	321	337	159	1017	794	637	997	529	533	427	431	431	337
102694 12:00	304	321	338	162	1018	794	637	999	526	532	428	429	429	338
102694 13:00	305	321	338	161	1018	795	638	1000	529	534	427	431	431	337
102694 14:00	306	321	338	160	1018	795	638	1000	531	534	428	432	432	338
102694 15:00	306	320	337	161	1019	795	638	993	531	534	428	433	433	337
102694 16:00	305	319	336	162	1018	798	638	987	533	535	430	434	434	338
102694 17:00	305	320	337	168	1018	795	638	987	535	538	430	434	434	339
102694 18:00	306	322	339	168	1020	791	639	990	533	535	433	435	435	340
102694 19:00	306	323	340	169	1018	795	637	994	533	537	431	435	435	340
102694 20:00	305	322	339	168	1018	795	636	999	533	537	432	434	434	340

Unit 1 Boiler Data
Table 3 of 6

Description	GAS LGV	GAS LGV	MS STOP	RH STOP	BFP TURB	BFP TURB	BFP TURB	BFP TURB
	PREHTR LOWER SEC B	PREHTR LOWER SEC C	VA A	NO 1 EXT	RH TO BLR	EXTR A NO	EXTR B NO	EXTR A NO
Units	"F	"F	"F	"F	"F	"F	"F	"F
1026/94 21:00	305	322	339	169	1018	785	638	998
1026/94 22:00	306	323	341	168	1018	795	638	997
1026/94 23:00	305	323	341	168	1018	797	639	996
1027/94 0:00	306	322	340	168	1018	795	637	994
1027/94 1:00	306	322	340	167	1018	794	637	996
1027/94 2:00	305	321	340	166	1018	793	636	988
1027/94 3:00	306	323	341	165	1019	795	637	987
1027/94 4:00	305	321	339	166	1015	789	633	1000
1027/94 5:00	305	321	338	164	1018	793	637	1009
1027/94 6:00	302	319	336	162	1019	794	637	1008
1027/94 8:00	301	319	336	166	1019	797	638	992
1027/94 9:00	301	318	335	169	1018	796	638	990
1027/94 10:00	303	320	337	166	1018	795	637	997
1027/94 11:00	305	321	338	172	1018	794	637	1001
1027/94 12:00	307	323	341	171	1018	794	638	1003
1027/94 13:00	307	321	340	169	1019	794	636	1006
1027/94 14:00	306	321	340	171	1019	794	638	1006
1027/94 15:00	305	319	337	176	1018	794	637	995
1027/94 16:00	306	320	339	176	1019	793	637	999
1027/94 17:00	306	321	340	175	1018	792	636	1006
1027/94 18:00	307	320	340	181	1018	792	635	1006
1027/94 19:00	308	323	342	180	1019	794	639	1006
1027/94 20:00	309	323	343	177	1020	794	639	1003
1027/94 21:00	307	320	340	184	1018	795	637	997
1027/94 22:00	308	318	339	165	1019	795	639	1000
1027/94 23:00	305	318	338	166	1019	797	639	992
1028/94 0:00	306	320	339	162	1018	795	638	994
1028/94 1:00	306	323	341	155	1018	794	637	998
1028/94 2:00	307	322	341	153	1019	798	639	995
1028/94 3:00	306	323	340	148	1017	795	637	994
1028/94 4:00	305	323	340	139	1018	797	639	987
1028/94 5:00	308	323	340	132	1016	794	637	1002
1028/94 6:00	305	322	339	126	1018	793	637	1016
1028/94 7:00	304	320	336	127	1019	795	639	1010
1028/94 8:00	302	319	338	134	1018	798	638	1001
1028/94 9:00	303	320	337	141	1016	795	639	1004
1028/94 10:00	305	321	339	127	1018	794	638	1011
1028/94 11:00	308	324	342	154	1018	793	638	1015
1028/94 12:00	306	322	342	163	1019	795	639	1008
1028/94 13:00	306	322	342	148	1018	795	639	1008
1028/94 14:00	305	322	342	142	1019	798	639	1000
1028/94 15:00	306	324	344	139	1019	796	639	1003
1028/94 16:00	306	325	345	137	1018	794	638	1007
1028/94 17:00	306	325	346	141	1018	793	637	1009

Unit 1 Boiler Data
Table 3 of 6

Description	GAS LGV PREHTR LOWER SEC B	GAS LGV PREHTR LOWER SEC C	GAS LGV PREHTR LOWER SEC D	STK GAS TMP	MS STOP VA A	NO 1 EXT	RH TO BLR	RH STOP VA A	BFP TURB EXTR A NO	BFP TURB EXTR B NO	BFP TURB EXTR A NO	BFP TURB EXTR B NO	BFP TURB EXTR A NO
Units	°F	°F	°F	°F	°F	°F	°F	°F	°F	°F	°F	°F	°F
102894 18:00	307	325	346	158	1018	793	638	1006	526	531	423	426	333
102894 19:00	308	325	346	162	1020	795	638	1003	527	532	424	429	334
102894 20:00	305	322	343	184	1018	790	635	997	522	528	421	425	332
102894 21:00	308	323	343	163	1019	794	638	1002	524	531	422	428	333
102894 22:00	308	324	344	161	1019	795	636	995	527	532	424	429	334
102894 23:00	305	324	343	161	1018	794	637	998	525	531	423	428	332
102894 0:00	306	323	343	164	1018	792	637	1005	521	529	421	425	332

Description	BFP TURB EXTR B NO	BFP TURB EXTR A NO	BFP TURB EXTR B NO
	5	6	6
Units	°F	°F	°F
102594 1:00	332	271	271
102594 2:00	334	272	271
102594 3:00	345	275	275
102594 4:00	338	275	275
102594 5:00	346	277	276
102594 6:00	351	278	278
102594 7:00	351	278	278
102594 8:00	349	278	277
102594 9:00	348	277	277
102594 10:00	347	277	277
102594 11:00	348	277	277
102594 12:00	348	277	277
102594 13:00	347	277	277
102594 14:00	349	278	277
102594 15:00	350	278	277
102594 16:00	349	277	277
102594 17:00	349	278	277
102594 18:00	349	277	277
102594 19:00	348	277	277
102594 20:00	349	277	277
102594 21:00	348	277	277
102594 22:00	350	277	277
102594 23:00	349	277	277
102694 0:00	348	277	277
102694 1:00	345	278	276
102694 2:00	337	274	274
102694 3:00	335	272	272
102694 4:00	333	272	272
102694 5:00	343	278	276
102694 6:00	348	278	277
102694 7:00	347	277	277
102694 8:00	350	278	276
102694 9:00	347	278	278
102694 10:00	348	277	277
102694 11:00	348	277	277
102694 12:00	346	277	277
102694 13:00	348	277	277
102694 14:00	349	278	277
102694 15:00	349	277	277
102694 16:00	349	277	277
102694 17:00	349	278	277
102694 18:00	350	277	277
102694 19:00	349	277	277
102694 20:00	349	277	277

Description	BFP TURB EXTR B NO 5	BFP TURB EXTR A NO 6	BFP TURB EXTR B NO 6
Units	°F	°F	°F
102894 21:00	349	277	277
102894 22:00	349	276	277
102894 23:00	350	277	277
102794 0:00	349	277	277
102794 1:00	348	277	276
102794 2:00	347	276	276
102794 3:00	349	277	276
102794 4:00	344	276	276
102794 5:00	346	277	276
102794 6:00	347	276	276
102794 8:00	350	278	277
102794 9:00	349	277	277
102794 10:00	349	276	277
102794 11:00	346	276	277
102794 12:00	348	277	277
102794 13:00	348	277	277
102794 14:00	348	277	277
102794 15:00	347	277	277
102794 16:00	347	277	276
102794 17:00	346	277	276
102794 18:00	345	277	276
102794 19:00	346	277	276
102794 20:00	345	277	276
102794 21:00	346	277	276
102794 22:00	346	277	276
102794 23:00	346	278	277
102894 0:00	347	277	277
102894 5:00	345	277	277
102894 6:00	343	277	276
102894 7:00	345	277	276
102894 8:00	346	277	277
102894 9:00	345	277	276
102894 10:00	343	277	276
102894 11:00	343	277	277
102894 12:00	343	277	276
102894 13:00	345	277	277
102894 14:00	346	277	277
102894 15:00	346	277	277
102894 16:00	346	277	277
102894 17:00	344	277	276

Description	BFP TURB EXTR B NO 5	BFP TURB EXTR A NO 6	BFP TURB EXTR B NO 6
Units	°F	°F	°F
10/28/94 18:00	344	277	276
10/28/94 19:00	345	277	276
10/28/94 20:00	342	276	276
10/28/94 21:00	344	277	276
10/28/94 22:00	345	277	276
10/28/94 23:00	344	277	276
10/29/94 0:00	342	277	276

Unit 1 Boiler Data
Table 4 of 6

Description	TURB A EXH A	TURB A EXTR B	TURBINE B EXTR NO 6	TURBINE B EXTR NO 7	TURBINE B EXTR NO 6 HTR A	TURBINE B EXTR NO 7 HTR B	TURBINE B EXTR NO 6 HTR A	TURBINE B EXTR NO 7 HTR B	TURBINE B EXTR NO 6 HTR A	TURBINE B EXTR NO 7 HTR B	TURBINE B EXTR NO 6 HTR A	TURBINE B EXTR NO 7 HTR B	TURBINE B EXTR NO 6 HTR A	TURBINE B EXTR NO 7 HTR B	TURBINE MS SV PSI	TURBINE 1ST STGE	TURBINE NO 1 EXTR TO B/R	TURBINE RH STEAM TO SV A	TURBINE EXTR NO 3 A	BFP psig	TURBINE EXTR NO 3 A
Units																					
102594 1:00	697	694	526	514	354	330	190	166	2395	1547	816	434	394	394	394	394	394	188			
102594 2:00	698	694	525	514	353	329	190	166	2399	1588	828	440	399	399	399	399	399	192			
102594 3:00	701	697	528	517	355	331	191	166	2406	1677	885	468	425	425	425	425	425	215			
102594 4:00	716	712	538	525	364	339	198	169	2402	1648	872	484	422	422	422	422	422	208			
102594 5:00	726	722	550	538	372	348	204	171	2400	1705	900	479	435	435	435	435	435	216			
102594 6:00	724	720	550	537	372	347	203	170	2408	1705	913	484	439	439	439	439	439	225			
102594 7:00	716	713	544	532	368	342	199	170	2409	1732	913	484	440	440	440	440	440	227			
102594 8:00	714	710	541	528	365	339	196	170	2405	1725	910	482	438	438	438	438	438	225			
102594 9:00	719	716	545	532	368	343	200	170	2402	1716	908	481	437	437	437	437	437	222			
102594 10:00	724	721	550	537	372	346	203	171	2402	1706	901	480	436	436	436	436	436	216			
102594 11:00	719	715	547	534	369	343	200	170	2403	1704	801	482	438	438	438	438	438	218			
102594 12:00	720	716	546	534	368	344	200	170	2401	1705	902	483	439	439	439	439	439	219			
102594 13:00	717	713	544	532	366	342	198	169	2401	1701	901	483	439	439	439	439	439	218			
102594 14:00	709	705	539	527	361	337	193	169	2401	1710	905	485	441	441	441	441	441	222			
102594 15:00	705	701	532	520	358	333	190	169	2402	1727	913	486	442	442	442	442	442	227			
102594 16:00	709	706	536	524	360	336	193	169	2399	1716	908	484	440	440	440	440	440	223			
102594 17:00	712	708	538	526	362	338	195	169	2402	1716	907	484	440	440	440	440	440	224			
102594 18:00	714	711	540	529	364	340	196	169	2402	1714	907	485	440	440	440	440	440	223			
102594 19:00	717	714	544	531	367	342	198	170	2400	1708	904	484	439	439	439	439	439	221			
102594 20:00	712	708	540	528	363	338	195	169	2403	1708	905	486	441	441	441	441	441	223			
102594 21:00	715	712	542	530	368	341	197	169	2403	1705	904	485	440	440	440	440	440	222			
102594 22:00	709	705	538	528	361	337	194	169	2404	1718	909	485	440	440	440	440	440	225			
102594 23:00	708	704	535	523	360	335	192	169	2402	1718	908	484	439	439	439	439	439	224			
102694 0:00	714	710	539	528	363	339	196	169	2402	1711	905	484	439	439	439	439	439	221			
102694 1:00	711	707	540	527	363	338	196	169	2404	1684	892	476	432	432	432	432	432	216			
102694 2:00	703	699	532	521	357	333	192	167	2400	1613	855	458	415	415	415	415	415	201			
102694 3:00	695	691	525	514	351	327	188	167	2400	1592	842	449	407	407	407	407	407	198			
102694 4:00	695	690	522	510	349	326	187	166	2398	1578	835	447	405	405	405	405	405	195			
102694 5:00	722	718	543	531	367	343	200	170	2402	1671	886	474	431	431	431	431	431	213			
102694 6:00	723	708	550	537	372	347	203	171	2405	1703	903	483	439	439	439	439	439	222			
102694 7:00	717	713	545	533	367	343	198	169	2401	1690	895	476	434	434	434	434	434	220			
102694 8:00	710	708	539	526	362	337	193	170	2402	1719	910	484	440	440	440	440	440	227			
102694 9:00	709	706	537	524	378	337	194	170	2405	1717	909	485	440	440	440	440	440	224			
102694 10:00	712	708	538	526	382	339	195	169	2403	1712	908	483	439	439	439	439	439	221			
102694 11:00	714	710	541	528	384	342	196	170	2404	1709	905	483	438	438	438	438	438	220			
102694 12:00	716	713	543	530	386	342	197	170	2401	1722	910	485	440	440	440	440	440	225			
102694 13:00	717	713	544	531	387	344	198	170	2404	1711	908	484	439	439	439	439	439	221			
102694 14:00	716	714	544	531	387	344	198	170	2405	1709	905	483	439	439	439	439	439	222			
102694 15:00	711	708	541	528	384	341	196	170	2404	1708	904	482	438	438	438	438	438	222			
102694 16:00	708	702	534	524	378	336	189	170	2401	1722	910	485	440	440	440	440	440	225			
102694 17:00	700	698	530	516	349	344	198	170	2404	1711	907	482	438	438	438	438	438	227			
102694 18:00	708	704	534	521	377	336	192	169	2395	1715	907	482	438	438	438	438	438	227			
102694 19:00	712	709	539	526	381	340	194	169	2402	1717	909	484	441	441	441	441	441	230			
102694 20:00	716	712	543	530	385	343	195	170	2404	1711	907	484	441	441	441	441	441	229			

Unit 1 Boiler Data
Table 4 of 6

Description	TURB A	TURB B	TURBINE A EXTR NO 6	TURBINE B EXTR NO 6	TURBINE A EXTR NO 7	TURBINE B EXTR NO 7	TURBINE A EXTR NO 8	TURBINE B EXTR NO 8	TURBINE A STGE	TURBINE B STGE	TURBINE A NO 1 EXTR	TURBINE B NO 1 EXTR	TURBINE A SV	TURBINE B SV	BFP	TURBINE A EXTR NO 3
	EXH A	EXH B	°F	°F	°F	°F	°F	°F	PSI	PSI	TO BFR	TO BFR	SV A	SV A	Psig	TURBINE A
Units																
10/26/94 21:00	715	712	543	530	385	342	195	170	2402	1710	907	484	442	442	229	
10/26/94 22:00	714	711	542	529	385	342	194	170	2402	1710	907	484	442	442	228	
10/26/94 23:00	705	701	535	522	378	335	190	169	2398	1719	911	485	442	442	228	
10/27/94 0:00	711	707	537	524	380	338	192	169	2401	1717	910	484	441	441	228	
10/27/94 1:00	714	710	541	528	384	341	194	169	2402	1705	904	481	438	438	225	
10/27/94 2:00	706	703	535	522	379	336	190	168	2400	1703	902	479	436	436	225	
10/27/94 3:00	706	702	534	521	377	338	169	168	2404	1714	907	481	438	438	228	
10/27/94 4:00	716	711	540	526	382	340	184	169	2403	1688	898	478	435	435	221	
10/27/94 5:00	725	721	551	537	392	348	201	170	2399	1697	901	481	436	436	220	
10/27/94 6:00	724	721	551	537	392	349	201	170	2402	1697	901	481	436	436	221	
10/27/94 8:00	711	707	540	526	383	339	192	170	2405	1719	910	483	440	440	228	
10/27/94 9:00	708	705	536	523	379	337	190	169	2403	1720	911	484	440	440	228	
10/27/94 10:00	714	711	541	527	383	341	194	170	2403	1711	907	483	440	440	228	
10/27/94 11:00	717	714	544	531	386	343	196	170	2403	1708	906	483	440	440	225	
10/27/94 12:00	719	716	546	532	388	345	198	169	2399	1704	904	483	440	440	224	
10/27/94 13:00	722	719	548	535	390	347	200	170	2401	1701	903	483	440	440	223	
10/27/94 14:00	723	719	550	538	391	348	200	170	2402	1700	903	482	440	440	222	
10/27/94 15:00	713	709	542	529	385	341	194	169	2402	1703	904	482	440	440	224	
10/27/94 16:00	716	713	542	529	385	342	196	169	2400	1697	901	481	439	439	223	
10/27/94 17:00	722	718	548	534	389	344	201	170	2405	1692	899	480	439	439	221	
10/27/94 18:00	724	721	550	538	391	346	203	187	2401	1688	897	481	439	439	219	
10/27/94 19:00	724	721	551	537	390	345	204	204	2401	1693	900	483	442	442	219	
10/27/94 20:00	720	717	546	534	386	341	202	202	2400	1692	900	482	440	440	218	
10/27/94 21:00	715	711	542	529	382	337	189	198	2401	1710	907	483	441	441	220	
10/27/94 22:00	718	714	544	531	384	339	200	195	2401	1704	904	482	440	440	219	
10/27/94 23:00	710	707	540	526	380	336	198	191	2401	1724	913	486	443	443	224	
10/28/94 0:00	711	708	538	525	379	335	198	191	2400	1719	911	485	442	442	223	
10/28/94 1:00	713	710	540	528	381	337	199	192	2400	1706	905	481	439	439	220	
10/28/94 2:00	713	709	534	515	381	337	199	192	2405	1729	915	484	441	441	220	
10/28/94 3:00	711	708	538	525	379	336	198	191	2403	1714	910	484	441	441	222	
10/28/94 4:00	708	703	535	522	376	332	198	188	2401	1725	914	485	442	442	223	
10/28/94 5:00	718	713	540	527	381	338	199	193	2405	1711	909	485	442	442	221	
10/28/94 6:00	730	727	555	541	394	349	208	208	2405	1698	902	483	440	440	214	
10/28/94 7:00	728	722	553	539	392	346	205	205	2408	1705	907	485	442	442	217	
10/28/94 8:00	718	714	547	533	386	341	201	198	2404	1715	911	485	442	442	220	
10/28/94 9:00	720	717	546	533	386	342	202	200	2401	1713	910	486	442	442	219	
10/28/94 10:00	726	722	551	536	391	346	204	205	2401	1701	905	485	441	441	215	
10/28/94 11:00	728	726	555	541	394	348	208	208	2401	1695	903	484	442	442	213	
10/28/94 12:00	724	720	551	537	390	345	204	203	2399	1695	903	485	443	443	214	
10/28/94 13:00	724	720	550	536	390	344	203	203	2399	1700	908	487	445	445	216	
10/28/94 14:00	717	713	545	531	385	340	200	197	2402	1711	910	496	445	445	219	
10/28/94 15:00	719	716	546	532	386	341	201	198	2403	1711	910	496	444	444	220	
10/28/94 16:00	722	719	549	535	388	343	202	202	2407	1707	909	486	444	444	221	
10/28/94 17:00	724	721	550	537	390	345	203	204	2404	1696	904	484	443	443	217	

Unit 1 Boiler Data
Table 4 of 6

Description	TURB A EXH A	TURB A EXH B	TURBINE B EXTR NO 6	TURBINE B EXTR NO 6	TURBINE B EXTR NO 7	TURBINE B HTR A	TURBINE B HTR B	TURBINE B EXTR NO 8	TURBINE B HTR A	TURBINE B HTR B	TURBINE 1ST MS SV PSI	TURBINE 1ST MS SV PSI	TURBINE NO 1 RH STEAM TO B/R PSIG	TURBINE NO 1 RH STEAM TO B/R PSIG	BFP TURBINE EXTR NO 3 A	BFP TURBINE EXTR NO 3 A
Units	°F	°F	°F	°F	°F	°F	°F	°F	°F	°F	psig	psig	psig	psig	psig	
102894 18:00	722	719	549	536	389	343	203	202	204	1694	903	484	443	217		
102894 19:00	720	716	548	534	388	342	202	200	201	1699	905	483	442	218		
102894 20:00	714	711	542	529	383	338	199	194	200	1678	893	477	438	213		
102894 21:00	719	716	545	532	385	341	201	198	2397	1698	903	482	441	215		
102894 22:00	713	708	542	529	382	336	198	193	2400	1701	905	482	441	217		
102894 23:00	715	711	542	528	382	338	199	194	2400	1698	902	481	440	216		
102894 0:00	721	718	547	533	387	342	202	201	2399	1686	899	481	440	213		

Unit 1 Boiler Data
Table 4 of 6

Unit 1 Boiler Data
Table 4 of 6

Description	BFP TURBINE EXTR NO 3	BFP TURBINE EXTR NO 4	BFP TURBINE EXTR NO 5	BFP TURBINE EXTR NO 6	BFP TURBINE EXTR NO 7	TURB A EXH A	TURB A EXH B	TURB B EXH A	TURB B EXH B	TURB #6 EXTR TO HTRS 7A	TURB #6 EXTR TO HTRS 7B	TURB B EXTR TO HTRS 8A	TURB B EXTR TO HTRS 8B
	psig	psig	psig	psig	psig	psig	psig	psig	psig	psia	psia	psia	psia
Units	102694 21:00	238	125	143	67	70	35	35	128	34	35	15	5
102694 22:00	236	125	143	67	70	35	35	134	129	34	35	15	5
102694 23:00	237	125	143	67	70	35	35	135	129	34	35	15	5
102794 0:00	236	125	143	67	70	35	34	134	128	34	35	15	5
102794 1:00	234	123	141	66	69	34	34	134	128	34	35	15	5
102794 2:00	234	123	141	66	69	34	34	133	127	34	35	15	5
102794 3:00	237	125	143	67	70	35	34	134	128	34	35	15	5
102794 4:00	230	121	139	65	68	34	34	133	127	34	35	15	5
102794 5:00	229	121	139	65	68	34	34	134	128	34	35	15	5
102794 6:00	230	122	139	65	69	34	34	134	128	34	35	15	5
102794 7:00	234	123	141	67	70	35	34	135	129	34	35	15	5
102794 8:00	237	125	143	67	70	35	34	135	129	34	35	15	5
102794 9:00	235	124	142	66	70	35	34	134	128	34	35	15	5
102794 10:00	233	123	141	66	69	35	34	134	128	34	35	15	5
102794 11:00	233	123	141	66	69	35	34	134	128	34	35	15	5
102794 12:00	233	123	141	66	69	35	34	135	129	34	35	15	5
102794 13:00	232	123	140	66	69	35	34	134	128	34	35	15	5
102794 14:00	231	122	140	66	69	35	34	134	128	34	35	15	5
102794 15:00	232	123	140	66	69	35	34	134	128	34	35	15	5
102794 16:00	231	122	140	66	69	34	34	135	127	34	35	15	5
102794 17:00	230	121	139	65	68	34	34	135	127	34	35	15	5
102794 18:00	228	120	138	65	68	34	34	136	126	34	35	15	5
102794 19:00	228	120	138	65	68	34	34	134	126	34	35	15	5
102794 20:00	227	120	137	65	68	34	34	135	126	34	35	15	5
102794 21:00	229	121	138	65	68	34	34	134	126	34	35	15	5
102794 22:00	228	120	137	65	68	34	34	135	127	34	35	15	5
102794 23:00	232	123	140	66	69	35	34	136	126	34	35	15	5
102794 0:00	231	122	140	66	69	34	34	135	126	34	35	15	5
102894 1:00	229	120	138	65	68	35	34	134	126	34	35	14	6
102894 2:00	229	118	136	67	70	35	35	134	128	34	35	14	5
102894 3:00	230	120	139	65	68	34	34	135	129	34	35	15	5
102894 4:00	231	121	139	65	69	34	34	135	129	34	35	14	5
102894 5:00	229	120	138	65	68	35	34	135	128	34	35	14	5
102894 6:00	222	117	135	64	67	34	34	134	128	34	35	14	5
102894 7:00	225	118	136	64	67	35	34	135	129	34	35	14	5
102894 8:00	228	119	138	65	68	35	34	135	129	34	35	15	5
102894 9:00	227	119	137	65	68	34	34	135	129	34	35	15	5
102894 10:00	223	117	135	64	67	34	34	135	129	34	35	15	5
102894 11:00	221	118	134	64	67	34	34	135	129	34	35	15	5
102894 12:00	222	116	134	64	67	34	34	135	129	34	35	15	5
102894 13:00	225	118	136	64	68	35	34	136	129	34	35	15	5
102894 14:00	227	119	137	65	68	35	34	136	129	34	35	15	5
102894 15:00	228	120	138	65	68	35	34	135	129	34	35	16	5
102894 16:00	229	120	138	65	68	35	34	135	129	34	35	16	5
102894 17:00	225	118	137	65	68	34	34	135	129	34	35	15	5

Unit 1 Boiler Data
Table 4 of 6

Description	BFP TURBINE EXTR NO 3	BFP TURBINE EXTR NO 4	BFP TURBINE EXTR NO 4	BFP TURBINE EXTR NO 5	TURBINE EXTR NO 5	BFP TURB EXH A	BFP TURB EXH B	TURB A EXH A	TURB A EXH B	TURB B EXTR #3	TURB B EXTR #6	TURB B EXTR TO HTRS 7A	TURB B EXTR TO HTRS 7B	TURBINE B EXTR TO HTRS 8A
Units	psig	psig	psig	psig	psig	psig	psig	psig	psig	psig	psig	psig	psig	psig
10/29/94 18:00	225	118	136	65	68	34	34	34	34	35	35	15	15	5
10/29/94 19:00	226	119	137	65	68	34	34	34	34	35	35	15	15	5
10/29/94 20:00	221	118	134	63	66	34	33	33	33	34	34	14	14	5
10/29/94 21:00	223	117	135	64	67	34	34	34	34	35	35	14	14	5
10/29/94 22:00	226	118	136	64	67	34	34	34	34	35	35	14	14	5
10/29/94 23:00	224	118	136	64	67	34	34	34	34	35	35	14	14	5
10/29/94 0:00	221	116	134	64	67	34	34	34	34	35	35	14	14	5

Description	TURBINE B EXTR TO HTRS 8B	TURB B EXH "Hg
Units	psia	"Hg
1025/94 1:00	5	2.23
1025/94 2:00	5	2.29
1025/94 3:00	5	2.45
1025/94 4:00	5	2.43
1025/94 5:00	5	2.50
1025/94 6:00	5	2.52
1025/94 7:00	5	2.53
1025/94 8:00	5	2.52
1025/94 9:00	5	2.52
1025/94 10:00	5	2.49
1025/94 11:00	5	2.50
1025/94 12:00	5	2.48
1025/94 13:00	5	2.48
1025/94 14:00	5	2.49
1025/94 15:00	5	2.50
1025/94 16:00	5	2.49
1025/94 17:00	5	2.49
1025/94 18:00	5	2.50
1025/94 19:00	5	2.50
1025/94 20:00	5	2.52
1025/94 21:00	5	2.52
1025/94 22:00	5	2.52
1025/94 23:00	5	2.53
1026/94 0:00	5	2.52
1026/94 1:00	5	2.50
1026/94 2:00	5	2.41
1026/94 3:00	5	2.35
1026/94 4:00	5	2.28
1026/94 5:00	5	2.39
1026/94 6:00	5	2.44
1026/94 7:00	5	2.41
1026/94 8:00	5	2.45
1026/94 9:00	5	2.48
1026/94 10:00	5	2.49
1026/94 11:00	5	2.49
1026/94 12:00	5	2.48
1026/94 13:00	5	2.48
1026/94 14:00	5	2.48
1026/94 15:00	5	2.48
1026/94 16:00	5	2.49
1026/94 17:00	5	2.48
1026/94 18:00	5	2.44
1026/94 19:00	5	2.43
1026/94 20:00	5	2.43

Description	TURBINE B EXTR TO HTRS 8B	TURB B EXH
Units	psia	"Hg
10/26/94 21:00	5	2.43
10/26/94 22:00	5	2.43
10/26/94 23:00	5	2.43
10/27/94 0:00	5	2.43
10/27/94 1:00	5	2.40
10/27/94 2:00	5	2.37
10/27/94 3:00	5	2.38
10/27/94 4:00	5	2.34
10/27/94 5:00	5	2.38
10/27/94 6:00	5	2.34
10/27/94 8:00	5	2.36
10/27/94 9:00	5	2.36
10/27/94 10:00	5	2.35
10/27/94 11:00	5	2.35
10/27/94 12:00	5	2.35
10/27/94 13:00	5	2.35
10/27/94 14:00	5	2.36
10/27/94 15:00	5	2.36
10/27/94 16:00	5	2.36
10/27/94 17:00	5	2.36
10/27/94 18:00	5	2.36
10/27/94 19:00	5	2.37
10/27/94 20:00	5	2.35
10/27/94 21:00	5	2.36
10/27/94 22:00	5	2.34
10/27/94 23:00	5	2.37
10/28/94 0:00	5	2.35
10/28/94 1:00	5	2.33
10/28/94 2:00	5	2.36
10/28/94 3:00	5	2.34
10/28/94 4:00	5	2.34
10/28/94 5:00	5	2.34
10/28/94 6:00	5	2.32
10/28/94 7:00	5	2.33
10/28/94 8:00	5	2.34
10/28/94 9:00	5	2.34
10/28/94 10:00	5	2.33
10/28/94 11:00	5	2.34
10/28/94 12:00	5	2.35
10/28/94 13:00	5	2.37
10/28/94 14:00	5	2.36
10/28/94 15:00	5	2.36
10/28/94 16:00	5	2.39
10/28/94 17:00	5	2.38

Description	TURBINE B EXTR TO HTRS 8B	TURB B EXH	T_{Hg}
Units	psia		
102894 18:00	5	2.38	
102894 19:00	5	2.37	
102894 20:00	5	2.32	
102894 21:00	5	2.34	
102894 22:00	5	2.35	
102894 23:00	5	2.34	
102894 0:00	5	2.33	

Table 5 of 6

		HW PUMP		DIFF PRESS COND POL SYS PRE		DIFF PRESS COND POL SYS DE		CB PUMP DISC		BFW ENT NO 3 HTR		GEN GAS PRESS A		AIR FD FAN DISCHARG E		AIR FD FAN DISCHARG E		AIR FD FAN DISCHARG E		AIR WIND BOX F		AIR WIND BOX R	
Description	Units	HW PUMP	DISC	psig	psig	psig	psig	psig	psig	psig	psig	psig	psig	psig	psig	psig	psig	psig	psig	psig	psig	psig	
10/25/94 1:00	127	21	16	17	345	3183	3115	3208	33	31	46	45	44	44	43	45	44	43	46	46	36	37	
10/25/94 2:00	127	22	16	17	345	3183	3115	3208	33	31	46	45	44	44	43	45	44	43	46	46	36	37	
10/25/94 3:00	125	24	16	19	335	3283	3208	3208	33	31	46	45	44	44	43	45	44	43	47	47	37	37	
10/25/94 4:00	125	23	16	18	338	3251	3178	3178	33	31	46	45	44	44	43	45	44	43	47	47	37	37	
10/25/94 5:00	124	24	16	19	332	3280	3215	3215	33	31	47	46	45	45	44	45	45	44	47	47	37	37	
10/25/94 6:00	124	25	16	19	331	3321	3245	3245	33	31	46	45	45	45	44	45	45	44	46	46	37	37	
10/25/94 7:00	124	25	16	20	330	3326	3250	3250	33	31	46	45	44	44	43	45	44	43	46	46	37	37	
10/25/94 8:00	124	25	16	20	330	3317	3241	3241	33	31	46	45	44	44	43	45	44	43	46	46	36	36	
10/25/94 9:00	125	25	16	19	333	3306	3231	3231	34	30	46	45	44	44	43	45	44	43	46	46	36	36	
10/25/94 10:00	125	25	16	19	333	3297	3221	3221	34	35	46	45	44	44	43	45	44	43	46	46	36	36	
10/25/94 11:00	124	25	16	19	332	3285	3220	3220	35	36	46	45	44	44	43	45	44	43	46	46	36	36	
10/25/94 12:00	124	25	17	20	331	3298	3220	3220	35	36	46	45	44	44	43	45	44	43	46	46	36	36	
10/25/94 13:00	124	25	17	20	331	3294	3217	3217	34	36	46	45	44	44	43	45	44	43	46	46	36	36	
10/25/94 14:00	124	25	17	20	330	3289	3223	3223	34	36	46	45	44	44	43	45	44	43	47	47	36	36	
10/25/94 15:00	124	25	17	20	329	3315	3237	3237	34	36	46	45	44	44	43	45	44	43	47	47	36	36	
10/25/94 16:00	124	25	17	20	330	3305	3228	3228	34	36	46	45	44	44	43	45	44	43	47	47	36	36	
10/25/94 17:00	124	25	17	20	331	3311	3234	3234	34	36	46	45	44	44	43	45	44	43	47	47	36	36	
10/25/94 18:00	124	25	17	20	330	3309	3232	3232	34	35	46	45	44	44	43	45	44	43	46	46	36	36	
10/25/94 19:00	124	25	17	20	331	3302	3225	3225	34	35	47	46	45	45	44	45	45	44	46	46	36	36	
10/25/94 20:00	124	25	17	20	330	3305	3228	3228	34	35	47	46	45	45	44	45	45	44	46	46	36	36	
10/25/94 21:00	124	25	17	20	331	3304	3227	3227	34	35	47	46	45	45	44	45	45	44	46	46	36	36	
10/25/94 22:00	124	25	17	20	329	3315	3236	3236	34	35	47	46	45	45	44	45	45	44	46	46	36	36	
10/25/94 23:00	124	25	17	20	330	3300	3220	3220	34	35	46	45	44	44	43	45	44	43	46	46	36	36	
10/26/94 0:00	124	25	17	20	330	3305	3223	3223	33	34	46	45	44	44	43	45	44	43	46	46	36	36	
10/26/94 1:00	125	25	17	20	330	3304	3227	3227	33	34	46	45	44	44	43	45	44	43	46	46	36	36	
10/26/94 2:00	126	24	15	18	340	3210	3140	3140	33	34	45	44	43	43	42	45	44	43	46	46	36	36	
10/26/94 3:00	126	24	15	18	341	3191	3121	3121	33	34	45	44	43	43	42	45	44	43	46	46	36	36	
10/26/94 4:00	126	23	16	18	342	3187	3117	3117	33	34	45	44	43	43	42	45	44	43	46	46	36	36	
10/26/94 5:00	124	24	17	20	334	3265	3189	3189	33	34	46	45	44	44	43	45	44	43	46	46	36	36	
10/26/94 6:00	124	25	18	21	331	3287	3218	3218	34	34	46	45	44	44	43	45	44	43	46	46	36	36	
10/26/94 7:00	124	25	18	20	332	3290	3231	3231	34	34	46	45	44	44	43	45	44	43	46	46	36	36	
10/26/94 8:00	124	25	18	21	329	3315	3236	3236	34	34	46	45	44	44	43	45	44	43	46	46	36	36	
10/26/94 9:00	124	25	17	18	333	3310	3234	3234	33	34	46	45	44	44	43	45	44	43	46	46	36	36	
10/26/94 10:00	124	25	17	18	335	3303	3239	3239	33	34	46	45	44	44	43	45	44	43	46	46	36	36	
10/26/94 11:00	124	25	17	17	334	334	3239	3239	33	34	46	45	44	44	43	45	44	43	46	46	36	36	
10/26/94 12:00	124	25	16	16	336	3346	3240	3240	33	34	46	45	44	44	43	45	44	43	46	46	36	36	
10/26/94 13:00	124	25	16	16	335	3309	3233	3233	33	33	46	45	44	44	43	45	44	43	46	46	36	36	
10/26/94 14:00	124	25	16	16	335	3312	3237	3237	33	33	46	45	44	44	43	45	44	43	46	46	36	36	
10/26/94 15:00	124	25	17	17	335	3310	3235	3235	33	33	46	45	44	44	43	45	44	43	46	46	36	36	
10/26/94 16:00	124	25	17	17	334	3315	3239	3239	33	34	46	45	44	44	43	45	44	43	46	46	36	36	
10/26/94 17:00	124	25	17	17	334	3312	3235	3235	33	34	46	45	44	44	43	45	44	43	46	46	36	36	
10/26/94 18:00	124	25	17	17	332	3316	3237	3237	33	33	46	45	44	44	43	45	44	43	46	46	36	36	
10/26/94 19:00	124	25	18	18	332	3326	3240	3240	33	33	46	45	44	44	43	45	44	43	46	46	36	36	
10/26/94 20:00	124	25	18	18	332	3325	3241	3241	33	33	46	45	44	44	43	45	44	43	46	46	36	36	
10/26/94 21:00	124	25	18	18	332	3325	3241	3241	33	33	46	45	44	44	43	45	44	43	46	46	36	36	
10/26/94 22:00	124	25	18	18	332	3325	3241	3241	33	33	46	45	44	44	43	45	44	43	46	46	36	36	
10/26/94 23:00	124	25	18	18	332	3325	3241	3241	33	33	46	45	44	44	43	45	44	43	46	46	36	36	
10/26/94 0:00	124	25	18	18	332	3325	3241	3241	33	33	46	45	44	44	43	45	44	43	46	46	36	36	
10/26/94 1:00	124	25	18	18	332	3325	3241	3241	33	33	46	45	44	44	43	45	44	43	46	46	36	36	
10/26/94 2:00	124	25	18	18	332	3325	3241	3241	33	33	46	45	44	44	43	45	44	43	46	46	36	36	
10/26/94 3:00	124	25	18	18	332	3325	3241	3241	33	33	46	45	44	44	43	45	44	43	46	46	36	36	
10/26/94 4:00	124	25	18	18	332	3325	3241	3241	33	33	46	45	44	44	43	45	44	43	46	46	36	36	
10/26/94 5:00	124	25	18	18	332	3325	3241	3241	33	33	46	45	44	44	43	45	44	43	46	46	36	36	
10/26/94 6:00	124	25	18	18	332	3325	3241	3241	33	33	46	45	44	44	43	45	44	43	46	46	36	36	
10/26/94 7:00	124	25	18	18	332	3325	3241	3241	33	33	46	45	44	44	43	45	44	43	46	46	36	36	
10/26/94 8:00	124	25	18	18	332	3325	3241	3241	33	33	46	45	44	44	43	45	44	43	46	46	36	36	
10/26/94 9:00	124	25	18	18	332	3325	3241	3241	33	33	46	45	44	44	43	45	44	43	46	46	36	36	
10/26/94 10:00	124	25	18	18	332	3325	3241	3241	33	33	46	45	44	44	43	45	44	43	46	46	36	36	
10/26/94 11:00	124	25	18	18	332	3325	3241	3241	33	33	46	45	44	44	43	45	44	43	46	46	36	36	
10/26/94 12:00	124	25	18	18	332	3325	3241	3241	33	33	46	45	44	44	43	45	44	43	46	46	36	36	
10/26/94 13:00	124	25	18	18	332	3325	3241	3241	33	33	46	45	44	44	43	45	44	43	46	46	36	36	
10/26/94 14:00	124	25	18	18	332</td																		

Unit 1 Boiler Data
Table 5 of 6

Description	Units	DIFF PRESS	COND POL SYS PRE	COND POL SYS DE	BFW ENT NO 3 HTR	GEN GAS PRESS A	GEN GAS PRESS B	AIR FD FAN DISCHARG E B	AIR FD FAN DISCHARG E C	AIR FD FAN DISCHARG E D	AIR WIND BOX R 'H ₂ O
		psig	psig	psig	psig	psig	psig	'H ₂ O	'H ₂ O	'H ₂ O	'H ₂ O
10/26/94 20:00	123	25	20	18	332	324	35	46	45	44	47
10/26/94 21:00	123	25	20	18	332	322	35	46	45	44	48
10/26/94 22:00	123	25	20	18	332	323	35	46	45	44	46
10/26/94 23:00	123	26	19	18	331	323	35	46	45	44	46
10/27/94 0:00	123	26	19	17	332	323	35	46	45	44	47
10/27/94 1:00	124	26	19	17	332	320	35	46	45	44	47
10/27/94 2:00	124	25	19	17	333	320	35	46	45	44	47
10/27/94 3:00	123	26	19	17	331	323	35	46	45	44	47
10/27/94 4:00	124	25	18	17	333	328	35	46	45	44	46
10/27/94 5:00	124	25	18	17	332	328	35	46	45	44	46
10/27/94 6:00	124	25	18	17	333	329	35	46	45	44	46
10/27/94 8:00	124	26	18	17	331	323	34	46	45	44	46
10/27/94 9:00	124	26	18	17	331	323	34	46	45	44	46
10/27/94 10:00	124	26	19	17	332	325	34	46	45	44	46
10/27/94 11:00	124	26	19	17	333	320	34	46	45	44	46
10/27/94 12:00	124	25	19	17	333	322	34	46	45	44	46
10/27/94 13:00	123	25	19	18	333	320	34	46	45	44	47
10/27/94 14:00	123	25	19	18	333	328	34	46	45	44	47
10/27/94 15:00	123	25	19	18	333	328	34	46	45	44	46
10/27/94 16:00	123	25	19	18	333	328	34	46	45	44	46
10/27/94 17:00	123	25	20	18	333	329	34	46	45	44	46
10/27/94 18:00	123	25	19	17	334	328	34	46	45	44	46
10/27/94 19:00	123	26	20	18	332	329	34	46	45	44	47
10/27/94 20:00	123	26	20	18	328	329	33	46	45	44	47
10/27/94 21:00	123	26	20	18	331	320	33	46	45	44	47
10/27/94 22:00	123	26	19	18	332	328	33	46	45	44	47
10/27/94 23:00	123	26	19	18	330	313	33	46	45	44	47
10/28/94 0:00	123	26	19	18	330	313	33	46	45	44	47
10/28/94 1:00	123	27	19	18	328	303	33	46	45	44	47
10/28/94 2:00	123	27	19	18	326	322	34	47	46	45	48
10/28/94 3:00	123	27	19	18	329	308	33	46	45	44	47
10/28/94 4:00	123	27	19	18	328	309	33	46	45	44	47
10/28/94 5:00	123	27	19	18	329	303	32	46	45	44	48
10/28/94 6:00	123	27	19	18	331	328	32	45	45	44	48
10/28/94 7:00	123	27	19	18	330	329	32	45	44	43	48
10/28/94 8:00	123	27	19	18	329	328	32	45	44	43	48
10/28/94 9:00	123	27	19	18	330	329	33	45	44	43	48
10/28/94 10:00	123	27	19	18	331	328	34	45	44	43	48
10/28/94 11:00	124	26	19	17	333	327	36	46	45	44	48
10/28/94 12:00	123	25	20	18	332	328	37	46	45	44	48
10/28/94 13:00	123	25	20	18	332	329	36	46	45	44	47
10/28/94 14:00	123	24	20	18	333	328	36	46	45	44	47
10/28/94 15:00	123	24	20	18	334	330	36	46	45	44	48

Unit 1 Boiler Data
Table 5 of 6

Description Units	HW PUMP DISC psig	DIFF PRESS	DIFF PRESS	COND POL SYS DE	COND POL SYS POST MIN	CB PUMP FLTR psig	BFW ENT NO DISC psig	GEN GAS PRESS A psig	GEN GAS PRESS B psig	AIR FD FAN DISCHARG E C "H ₂ O	AIR FD FAN DISCHARG E D "H ₂ O	AIR FD FAN DISCHARG E B "H ₂ O	AIR FD FAN DISCHARG E C "H ₂ O	AIR FD FAN DISCHARG E D "H ₂ O	AIR WIND BOX F "H ₂ O	AIR WIND BOX R "H ₂ O
		DIFF PRESS	ENT HTR DISC psig													
102894 16:00	123	24	20	18	334	3303	3223	36	36	46	45	44	46	38	36	36
102894 17:00	124	24	20	18	335	3294	3213	36	36	46	45	44	46	36	36	36
102894 18:00	124	24	20	18	334	3291	3210	36	36	46	45	44	46	36	36	36
102894 19:00	123	24	20	18	334	3291	3209	36	36	46	45	44	46	36	36	36
102894 20:00	124	23	20	18	336	3268	3189	36	35	45	45	44	46	36	36	36
102894 21:00	123	24	20	18	334	3280	3199	36	35	46	45	44	46	36	36	36
102894 22:00	123	24	20	18	333	3282	3202	36	35	46	45	44	46	36	36	36
102894 23:00	123	24	20	18	333	3279	3199	35	35	46	45	44	46	36	36	36
102894 0:00	123	24	20	18	334	3271	3192	35	35	46	45	44	46	36	36	36

Unit 1 Boiler Data

Table 5 of 6

Description	FURN Units	GAS DIFF PRESS FURN HT SH "H ₂ O	GAS DIFF PRESS FURN HT RH "H ₂ O	GAS DIFF PRESS FURN LT SH "H ₂ O	GAS DIFF PRESS ECON "H ₂ O	PRESS AIR HTR LOWER A "H ₂ O	PRESS AIR HTR LOWER B "H ₂ O	PRESS AIR HTR LOWER C "H ₂ O	GAS DIFF PRESS AIR HTR LOWER D "H ₂ O	GAS DIFF PRESS AIR HTR UPPER RS "H ₂ O	GAS DIFF PRESS AIR HTR UPPER LS "H ₂ O
1025/94 1:00	0.0	1.3	0.8	3.4	2.0	2.3	2.2	2.5	2.2	3.5	4.2
1025/94 2:00	-0.1	1.3	0.9	3.5	2.0	2.4	2.3	2.4	2.2	3.6	4.3
1025/94 3:00	-0.2	1.4	1.0	3.7	2.1	2.6	2.5	2.6	2.4	3.9	4.6
1025/94 4:00	-0.2	1.3	1.0	3.7	2.2	2.5	2.5	2.5	2.4	3.8	4.5
1025/94 5:00	-0.1	1.3	1.0	3.9	2.2	2.6	2.5	2.6	2.5	3.9	4.6
1025/94 6:00	-0.2	1.3	0.9	3.7	2.2	2.5	2.5	2.6	2.4	3.6	4.4
1025/94 7:00	-0.2	1.3	0.9	3.6	2.1	2.4	2.4	2.5	2.4	3.7	4.3
1025/94 8:00	-0.2	1.3	0.9	3.6	2.1	2.4	2.4	2.5	2.4	3.7	3.9
1025/94 9:00	-0.2	1.3	0.8	3.6	2.1	2.4	2.4	2.4	2.3	3.7	4.3
1025/94 10:00	-0.2	1.3	0.8	3.6	2.0	2.4	2.4	2.4	2.3	3.7	4.2
1025/94 11:00	-0.2	1.3	0.8	3.7	2.1	2.5	2.5	2.5	2.4	3.8	4.4
1025/94 12:00	-0.2	1.2	0.8	3.7	2.1	2.5	2.5	2.5	2.3	3.7	4.5
1025/94 13:00	-0.2	1.3	0.8	3.6	2.0	2.5	2.4	2.5	2.3	3.7	4.5
1025/94 14:00	-0.2	1.3	0.8	3.7	2.1	2.6	2.5	2.5	2.4	3.8	4.5
1025/94 15:00	-0.2	1.3	0.8	3.7	2.1	2.6	2.5	2.5	2.4	3.8	4.5
1025/94 16:00	-0.2	1.3	0.8	3.7	2.1	2.6	2.4	2.5	2.4	3.8	4.6
1025/94 17:00	-0.2	1.3	0.8	3.6	2.1	2.6	2.3	2.5	2.6	3.8	4.7
1025/94 18:00	-0.2	1.3	0.8	3.6	2.1	2.6	2.3	2.5	2.6	3.8	4.6
1025/94 19:00	-0.1	1.3	0.8	3.6	2.1	2.6	2.2	2.5	2.4	3.8	4.5
1025/94 20:00	-0.2	1.3	0.8	3.7	2.1	2.6	2.3	2.5	2.5	3.8	4.7
1025/94 21:00	-0.2	1.3	0.8	3.7	2.1	2.6	2.3	2.6	2.6	3.8	4.7
1025/94 22:00	-0.2	1.3	0.8	3.6	2.1	2.6	2.3	2.7	2.6	3.8	4.7
1025/94 23:00	-0.2	1.3	0.8	3.7	2.0	2.5	2.3	2.6	2.6	3.7	4.6
1026/94 0:00	-0.2	1.4	0.8	3.8	2.1	2.5	2.4	2.9	2.6	3.8	4.7
1026/94 1:00	-0.2	1.4	0.9	3.9	2.1	2.4	2.4	2.8	2.6	3.8	4.7
1026/94 2:00	-0.2	1.4	0.9	4.0	2.2	2.4	2.4	2.9	2.6	3.9	4.7
1026/94 3:00	-0.2	1.3	0.7	3.7	2.0	2.3	2.2	2.7	2.4	3.6	4.5
1026/94 4:00	-0.2	1.3	0.8	3.7	2.0	2.3	2.2	2.6	2.4	3.6	4.3
1026/94 5:00	-0.2	1.4	0.9	3.9	2.1	2.4	2.4	2.8	2.6	3.8	4.7
1026/94 6:00	-0.2	1.4	0.9	4.0	2.2	2.4	2.4	2.9	2.6	3.9	4.7
1026/94 7:00	-0.2	1.4	0.9	3.9	2.2	2.4	2.4	2.9	2.6	3.8	4.5
1026/94 8:00	-0.2	1.4	0.9	3.9	2.2	2.4	2.4	2.9	2.6	3.8	4.5
1026/94 9:00	-0.2	1.3	0.9	3.7	2.1	2.4	2.3	2.8	2.6	3.7	4.5
1026/94 10:00	-0.2	1.4	0.9	3.7	2.1	2.4	2.4	2.8	2.5	3.8	4.6
1026/94 11:00	-0.2	1.3	0.9	3.7	2.1	2.4	2.4	2.9	2.5	3.7	4.5
1026/94 12:00	-0.2	1.4	0.9	3.7	2.1	2.4	2.4	2.9	2.5	3.7	4.5
1026/94 13:00	-0.2	1.3	0.9	3.7	2.1	2.4	2.4	2.8	2.5	3.7	4.5
1026/94 14:00	-0.2	1.3	0.8	3.7	2.1	2.4	2.4	2.8	2.5	3.7	4.5
1026/94 15:00	-0.2	1.4	0.8	3.7	2.0	2.4	2.3	2.7	2.5	3.7	4.5
1026/94 16:00	-0.2	1.3	0.9	3.7	2.0	2.5	2.3	2.8	2.5	3.7	4.5
1026/94 17:00	-0.2	1.3	0.9	3.6	2.1	2.5	2.3	2.8	2.5	3.7	4.5
1026/94 18:00	-0.2	1.3	0.9	3.7	2.1	2.5	2.4	2.8	2.5	3.7	4.5
1026/94 19:00	-0.2	1.3	0.8	3.7	2.0	2.5	2.3	2.8	2.5	3.7	4.4

Table 5 of 6

Unit 1 Boiler Data

Table 5 of 6

Unit 1 Boiler Data
Table 6 of 6

		MAKE UP WATER FROM DWT									
Description	BFW ENT HTRS 3A	RH ATTEMP	ATTEMP	WATER RS	DRAIN LGV	DRAIN LGV	BLDG HTG	COND FLOW	COND AIR FLOW	COMB AIR FLOW CFD	FLASH RW M
Units	LB/HR	LB/HR	LB/HR	LB/HR	LB/HR	LB/HR	LB/HR	LB/HR	LB/HR	LB/HR	LB/HR
102594 1:00	2,145,000	2,155,000	2,100	300	408,200	408,900	-2,300	3,284,000	2,524,000	2,760,000	58,500
102594 2:00	2,170,000	2,182,000	2,100	300	415,200	414,900	-2,300	3,324,000	2,570,000	2,801,000	61,300
102594 3:00	2,312,000	2,325,000	2,200	200	440,900	434,100	-2,300	3,518,000	2,698,000	2,879,000	62,800
102594 4:00	2,278,000	2,293,000	2,300	300	435,100	428,300	-2,300	3,465,000	2,674,000	2,855,000	62,800
102594 5:00	2,340,000	2,353,000	2,300	200	449,300	439,400	-2,300	3,559,000	2,746,000	2,885,000	63,000
102594 6:00	2,368,000	2,381,000	2,300	200	451,200	436,300	-2,300	3,589,000	2,709,000	2,871,000	64,800
102594 7:00	2,378,000	2,392,000	2,300	200	452,800	438,700	-2,300	3,609,000	2,653,000	2,853,000	66,500
102594 8:00	2,372,000	2,383,000	2,300	200	450,600	435,400	-2,300	3,612,000	2,681,000	2,849,000	66,500
102594 9:00	2,359,000	2,372,000	2,300	200	449,400	437,800	-2,300	3,576,000	2,846,000	2,851,000	66,300
102594 10:00	2,346,000	2,359,000	2,200	200	447,300	437,000	-2,300	3,587,000	2,626,000	2,861,000	66,200
102594 11:00	2,357,000	2,369,000	2,300	200	448,000	437,300	-2,300	3,587,000	2,672,000	2,871,000	66,200
102594 12:00	2,357,000	2,370,000	35,500	300	447,600	437,500	-2,400	3,589,000	2,658,000	2,862,000	63,500
102594 13:00	2,358,000	2,372,000	46,500	300	446,600	438,100	-2,400	3,590,000	2,849,000	2,857,000	62,800
102594 14:00	2,376,000	2,390,000	61,100	300	446,500	440,100	-2,500	3,620,000	2,880,000	2,876,000	62,500
102594 15:00	2,387,000	2,400,000	32,600	300	451,500	440,800	-2,600	3,625,000	2,862,000	2,882,000	62,400
102594 16:00	2,372,000	2,385,000	32,500	300	449,500	436,800	-2,600	3,611,000	2,701,000	2,872,000	62,300
102594 17:00	2,370,000	2,384,000	32,800	300	448,800	438,700	-2,500	3,604,000	2,670,000	2,860,000	62,100
102594 18:00	2,361,000	2,368,000	32,600	300	447,800	437,000	-2,500	3,604,000	2,672,000	2,854,000	62,100
102594 19:00	2,361,000	2,375,000	32,600	300	446,900	437,400	-2,500	3,594,000	2,686,000	2,866,000	61,700
102594 20:00	2,374,000	2,388,000	67,900	700	446,000	435,700	-2,500	3,615,000	2,703,000	2,867,000	62,800
102594 21:00	2,367,000	2,390,000	51,800	300	445,900	435,300	-2,400	3,609,000	2,676,000	2,858,000	62,100
102594 22:00	2,381,000	2,394,000	44,800	300	449,900	438,900	-2,400	3,624,000	2,685,000	2,857,000	62,100
102594 23:00	2,374,000	2,387,000	32,900	300	449,200	437,400	-2,400	3,616,000	2,686,000	2,865,000	63,100
102594 0:00	2,365,000	2,376,000	32,900	300	446,500	436,300	-2,400	3,602,000	2,720,000	2,885,000	63,300
102594 1:00	2,336,000	2,349,000	32,900	300	443,000	432,500	-2,300	3,580,000	2,686,000	2,868,000	63,500
102594 2:00	2,247,000	2,258,000	32,600	400	426,700	419,200	-2,400	3,439,000	2,598,000	2,867,000	63,500
102594 3:00	2,226,000	2,239,000	32,500	500	424,100	414,500	16,500	3,416,000	2,595,000	2,799,000	62,700
102594 4:00	2,217,000	2,230,000	32,500	500	420,200	414,700	23,100	3,411,000	2,623,000	2,791,000	61,100
102594 5:00	2,331,000	2,345,000	32,800	300	444,400	433,100	22,500	3,555,000	2,729,000	2,842,000	61,400
102594 6:00	2,368,000	2,381,000	32,900	300	449,600	437,100	22,500	3,604,000	2,750,000	2,857,000	62,000
102594 7:00	2,353,000	2,365,000	32,900	300	444,600	429,500	24,400	3,505,000	2,726,000	2,856,000	61,800
102594 8:00	2,387,000	2,401,000	33,000	300	451,100	434,400	15,600	3,635,000	2,713,000	2,858,000	61,100
102594 9:00	2,376,000	2,396,000	33,000	300	450,300	431,800	-1,900	3,622,000	2,686,000	2,860,000	61,400
102594 10:00	2,336,000	2,379,000	33,000	300	449,700	432,500	-2,500	3,604,000	2,682,000	2,855,000	61,400
102594 11:00	2,361,000	2,374,000	33,000	300	449,000	430,500	-2,400	3,599,000	2,660,000	2,854,000	61,800
102594 12:00	2,354,000	2,366,000	33,000	300	446,800	431,300	-2,300	3,622,000	2,623,000	2,853,000	71,400
102594 13:00	2,377,000	2,386,000	33,100	300	449,400	432,700	1,200	3,601,000	2,635,000	2,866,000	67,300
102594 14:00	2,363,000	2,374,000	33,100	300	448,200	428,900	-2,300	3,597,000	2,636,000	2,867,000	67,100
102594 15:00	2,363,000	2,375,000	21,000	300	448,000	432,200	-2,300	3,605,000	2,620,000	2,858,000	67,300
102594 16:00	2,379,000	2,393,000	32,100	300	450,900	433,200	600	3,622,000	2,643,000	2,859,000	71,400
102594 17:00	2,377,000	2,389,000	33,100	300	449,400	432,700	1,200	3,601,000	2,635,000	2,866,000	67,300
102594 18:00	2,395,000	2,406,000	33,200	300	451,900	433,900	54,000	3,646,000	2,670,000	2,860,000	67,600
102594 19:00	2,401,000	2,410,000	33,300	300	450,900	434,500	55,700	3,655,000	2,649,000	2,862,000	65,900

Unit 1 Boiler Data
Table 6 of 6

Description	BFW ENT HTRS 3A	BFW ENT HTRS 3B	RH ATTEMP WATER RS	DRAIN LGV HTRS 3A	DRAIN LGV HTRS 3B	BLDG HTG STM	COND FLOW	COMB AIR FLOW A/B	COMB AIR FLOW C/D	FLASH RW M	FLASH RW M	MAKE UP WATER FROM DWT LB/HR
Units	LB/HR	LB/HR	LB/HR	LB/HR	LB/HR	LB/HR	LB/HR	LB/HR	LB/HR	LB/HR	LB/HR	LB/HR
102694 20:00	2,395,000	2,408,000	36,200	451,100	431,000	56,600	3,648,000	2,635,000	2,844,000	65,300	37,900	22,500
102694 21:00	2,396,000	2,410,000	46,100	449,700	432,900	57,200	3,654,000	2,633,000	2,853,000	65,000	37,600	25,300
102694 22:00	2,395,000	2,407,000	47,800	450,000	433,000	46,000	3,646,000	2,645,000	2,846,000	65,100	37,700	20,600
102694 23:00	2,406,000	2,418,000	46,800	453,500	435,600	45,300	3,667,000	2,670,000	2,854,000	65,800	36,100	29,400
102794 0:00	2,398,000	2,409,000	300	452,800	432,300	46,200	3,646,000	2,666,000	2,862,000	65,400	37,700	20,400
102794 1:00	2,383,000	2,395,000	33,300	450,000	434,200	46,900	3,637,000	2,710,000	2,873,000	65,500	37,400	27,800
102794 2:00	2,379,000	2,390,000	33,300	449,800	429,100	47,300	3,624,000	2,710,000	2,861,000	65,800	37,400	26,000
102794 3:00	2,395,000	2,407,000	33,400	451,700	432,200	47,500	3,650,000	2,716,000	2,867,000	65,500	37,600	33,300
102794 4:00	2,368,000	2,377,000	33,300	446,300	429,500	48,000	3,602,000	2,685,000	2,860,000	65,700	37,300	20,200
102794 5:00	2,370,000	2,384,000	33,300	449,800	431,300	48,800	3,619,000	2,694,000	2,874,000	65,300	37,200	25,500
102794 6:00	2,371,000	2,385,000	33,400	450,100	431,300	46,900	3,612,000	2,703,000	2,876,000	65,800	37,300	20,200
102794 8:00	2,401,000	2,413,000	33,500	453,500	432,400	46,900	3,656,000	2,688,000	2,884,000	66,300	37,300	29,500
102794 9:00	2,400,000	2,414,000	33,500	453,300	432,900	46,100	3,658,000	2,676,000	2,885,000	66,200	36,000	20,800
102794 10:00	2,389,000	2,404,000	33,500	452,200	429,100	46,400	3,641,000	2,676,000	2,883,000	66,000	37,800	20,400
102794 11:00	2,383,000	2,398,000	33,500	450,100	431,200	43,900	3,633,000	2,681,000	2,899,000	65,800	37,600	20,400
102794 12:00	2,377,000	2,369,000	33,500	449,700	430,800	42,500	3,625,000	2,678,000	2,890,000	65,300	37,100	20,500
102794 13:00	2,374,000	2,387,000	33,500	449,000	430,400	41,300	3,684,000	2,698,000	2,889,000	65,100	37,800	94,700
102794 14:00	2,374,000	2,384,000	33,400	449,900	430,400	40,000	3,698,000	2,677,000	2,880,000	64,800	37,400	13,800
102794 15:00	2,378,000	2,387,000	33,400	450,000	429,900	39,500	3,685,000	2,647,000	2,882,000	64,800	37,500	90,800
102794 16:00	2,370,000	2,380,000	33,400	448,200	429,000	39,900	3,686,000	2,670,000	2,887,000	65,900	42,200	134,100
102794 17:00	2,362,000	2,375,000	33,400	446,800	428,700	40,000	3,703,000	2,696,000	2,890,000	61,800	51,700	168,700
102794 18:00	2,356,000	2,371,000	40,600	446,400	428,300	40,200	3,676,000	2,646,000	2,883,000	63,800	59,900	19,800
102794 19:00	2,362,000	2,371,000	54,200	446,700	433,400	40,900	3,647,000	2,688,000	2,899,000	65,900	73,200	15,300
102794 20:00	2,375,000	2,386,000	53,700	450,500	431,100	42,300	3,651,000	2,676,000	2,911,000	105,300	88,400	10,400
102794 21:00	2,384,000	2,396,000	33,500	453,700	434,000	43,200	3,685,000	2,680,000	2,915,000	106,500	87,900	8,600
102794 22:00	2,376,000	2,389,000	33,400	453,500	434,300	44,000	3,647,000	2,686,000	2,917,000	117,400	82,200	8,400
102794 23:00	2,401,000	2,414,000	33,300	457,000	436,400	44,700	3,677,000	2,706,000	2,930,000	106,800	75,100	8,200
102894 0:00	2,398,000	2,408,000	33,300	455,900	433,000	45,300	3,672,000	2,738,000	2,906,000	107,000	75,300	7,800
102894 1:00	2,382,000	2,394,000	33,300	453,800	433,900	46,200	3,700,000	2,736,000	2,897,000	106,800	74,900	6,500
102894 2:00	2,410,000	2,422,000	33,800	510,800	446,200	46,300	3,700,000	2,749,000	2,916,000	106,900	75,100	62,100
102894 3:00	2,395,000	2,409,000	33,600	455,800	436,200	46,200	3,680,000	2,730,000	2,877,000	107,300	75,200	13,200
102894 4:00	2,407,000	2,417,000	33,600	459,700	437,000	46,500	3,695,000	2,727,000	2,871,000	107,700	75,300	13,000
102894 5:00	2,392,000	2,405,000	33,600	456,400	432,100	46,800	3,678,000	2,711,000	2,873,000	107,400	75,000	13,300
102894 6:00	2,370,000	2,382,000	33,500	455,100	431,800	46,300	3,700,000	2,749,000	2,916,000	107,000	74,600	13,600
102894 7:00	2,387,000	2,397,000	47,100	458,100	431,700	47,300	3,686,000	2,677,000	2,851,000	107,400	75,200	13,800
102894 8:00	2,395,000	2,407,000	35,500	457,500	432,300	47,200	3,684,000	2,686,000	2,854,000	108,000	75,200	14,000
102894 9:00	2,392,000	2,405,000	35,500	458,300	433,000	48,300	3,679,000	2,688,000	2,868,000	107,800	75,200	14,500
102894 10:00	2,376,000	2,388,000	35,600	456,600	432,700	44,000	3,660,000	2,689,000	2,884,000	107,700	74,900	14,800
102894 11:00	2,389,000	2,391,000	41,300	454,400	432,400	40,800	3,650,000	2,705,000	2,879,000	107,300	74,700	15,300
102894 12:00	2,374,000	2,387,000	56,900	459,900	432,900	39,000	3,698,000	2,704,000	2,890,000	107,200	74,900	81,400
102894 13:00	2,382,000	2,382,000	59,200	454,400	433,600	35,800	3,662,000	2,706,000	2,912,000	107,400	75,200	10,800
102894 14:00	2,390,000	2,402,000	43,800	456,400	433,700	34,700	3,682,000	2,728,000	2,902,000	107,300	75,200	8,800
102894 15:00	2,386,000	2,395,000	34,200	455,500	430,500	34,400	3,655,000	2,700,000	2,885,000	107,000	75,100	8,800

Unit 1 Boiler Data
Table 6 of 6

Description Units	BFW ENT HTRS 3A LB/HR	BFW ENT HTRS 3B LB/HR	RH ATTEMP WATER RS WATER LS	ATTEMP WATER RS WATER LS	DRAIN LVG HTRS 3A LB/HR	DRAIN LVG HTRS 3B LB/HR	COND FLOW LB/HR	COND FLOW AIR LB/HR	COND FLOW AIR LB/HR	FLASH RW M LB/HR	FLASH RW M LB/HR	MAKE UP WATER FROM DWT LB/HR
102894 16:00	2,382,000	2,392,000	34,200	35,700	454,300	432,600	34,400	3,651,000	2,891,000	2,866,000	106,600	73,400
102894 17:00	2,369,000	2,380,000	34,200	300	451,800	430,400	35,000	3,636,000	2,876,000	2,850,000	106,100	74,900
102894 18:00	2,372,000	2,384,000	49,900	400	451,700	429,200	35,500	3,640,000	2,861,000	2,853,000	106,500	74,900
102894 19:00	2,374,000	2,384,000	36,300	300	452,500	432,700	36,600	3,642,000	2,876,000	2,861,000	106,300	74,800
102894 20:00	2,346,000	2,359,000	34,100	300	447,800	426,000	38,300	3,603,000	2,856,000	2,854,000	105,800	74,100
102894 21:00	2,369,000	2,378,000	34,200	300	454,200	430,600	39,300	3,638,000	2,701,000	2,677,000	105,800	74,500
102894 22:00	2,376,000	2,386,000	34,200	300	454,000	429,800	39,700	3,650,000	2,710,000	2,680,000	106,000	74,700
102894 23:00	2,371,000	2,381,000	34,200	300	453,100	431,600	40,000	3,644,000	2,716,000	2,688,000	105,900	74,500
-102994 0:00	2,362,000	2,370,000	36,800	300	452,500	428,600	41,300	3,637,000	2,743,000	2,893,000	106,000	74,200
												13,500

Description	BFP	TURBINE	BFP	TURBINE	STEAM	NO 4 EXTR	DRAINS	DRAINS	O2 IN FLUE	O2 IN FLUE
	FLOW LP A	STEAM	FLOW LP B	NO 4 EXTR	LYG HTRS	6A	LYG HTRS	6B	Avg	STK
Units	LB/HR	LB/HR	LB/HR	LB/HR	LB/HR	LB/HR	LB/HR	LB/HR	%	%
102594 1:00	212,000	303,600	125,700	140,100	153,800	3.8	6.2			
102594 2:00	217,700	307,300	128,200	144,200	157,400	3.9	6.2			
102594 3:00	251,100	327,200	138,800	158,500	170,800	3.7	6.0			
102594 4:00	233,400	321,000	134,100	153,700	167,000	3.7	6.0			
102594 5:00	247,700	325,900	139,000	159,400	171,500	3.6	5.9			
102594 6:00	261,900	330,900	142,200	164,500	174,400	3.5	5.7			
102594 7:00	265,300	332,200	143,400	168,200	174,800	3.4	5.6			
102594 8:00	262,800	331,000	142,700	164,500	173,400	3.4	5.6			
102594 9:00	254,500	328,900	140,600	162,500	172,700	3.4	5.6			
102594 10:00	245,500	327,000	139,000	159,900	171,900	3.4	5.6			
102594 11:00	248,100	326,900	139,300	161,000	172,700	3.5	5.7			
102594 12:00	246,700	327,400	139,400	162,000	173,500	3.4	5.7			
102594 13:00	246,200	327,300	139,400	161,800	174,500	3.4	5.6			
102594 14:00	254,900	329,400	141,900	164,000	176,100	3.5	5.7			
102594 15:00	264,900	332,100	143,400	168,600	177,700	3.5	5.7			
102594 16:00	257,000	329,900	141,900	163,900	176,600	3.6	6.1			
102594 17:00	258,900	330,400	142,200	164,600	176,700	3.5	5.7			
102594 18:00	256,600	330,100	141,800	164,200	176,300	3.4	5.7			
102594 19:00	252,200	328,600	141,500	163,000	175,100	3.4	5.7			
102594 20:00	256,400	329,400	143,200	163,900	175,300	3.5	5.7			
102594 21:00	252,600	329,100	142,000	164,000	175,400	3.4	5.7			
102594 22:00	262,800	331,300	144,300	165,600	175,800	3.5	5.7			
102594 23:00	258,900	330,500	143,200	165,200	174,900	3.4	5.7			
102694 0:00	253,000	328,600	141,600	163,000	173,700	3.5	5.8			
102694 1:00	245,500	325,600	138,800	159,000	170,500	3.6	5.9			
102694 2:00	223,800	313,400	130,900	150,400	163,400	3.6	6.0			
102694 3:00	222,700	313,000	131,000	148,100	161,900	3.7	6.1			
102694 4:00	222,200	313,900	130,100	146,900	161,700	3.9	6.2			
102694 5:00	248,300	325,700	138,700	158,400	172,900	3.7	5.9			
102694 6:00	257,800	329,400	141,800	163,200	178,700	3.6	5.8			
102694 7:00	256,900	328,600	141,400	162,300	175,500	3.6	5.9			
102694 8:00	269,000	332,900	144,800	167,400	178,600	3.5	5.8			
102694 9:00	259,200	330,600	143,400	164,700	176,500	3.4	5.7			
102694 10:00	252,100	328,800	141,900	162,900	173,600	3.4	5.7			
102694 11:00	250,800	328,500	141,400	162,400	173,100	3.3	5.7			
102694 12:00	248,300	326,600	140,200	161,000	172,500	3.3	5.7			
102694 13:00	254,000	328,200	141,100	163,300	173,800	3.3	5.8			
102694 14:00	257,400	328,700	141,500	162,800	174,300	3.3	5.8			
102694 15:00	256,200	329,800	141,400	163,300	175,100	3.3	5.7			
102694 16:00	262,800	331,300	142,800	165,400	175,800	3.3	5.8			
102694 17:00	267,800	331,300	143,500	165,800	177,000	3.4	5.8			
102694 18:00	276,400	333,200	145,800	167,400	179,100	3.4	5.8			
102694 19:00	282,100	334,300	147,100	170,200	182,000	3.3	5.5			

Unit 1 Boiler Data
Table 6 of 6

	BFP TURBINE STEAM FLOW LP A	BFP TURBINE STEAM FLOW LP B	NO 4 EXTR FLOW	DRAINS LVG HTRS 6A	DRAINS LVG HTRS 6B	O2 IN FLUE LB/HR	O2 IN FLUE AVG	O2 IN FLUE STK
Description	LB/HR	LB/HR	LB/HR	LB/HR	LB/HR	%	%	%
Units								
1026794 20:00	276,600	334,400	146,700	169,200	161,300	3.3	3.3	5.5
1026794 21:00	274,700	334,800	146,900	169,100	161,800	3.3	3.3	5.5
1026794 22:00	271,200	333,800	146,100	168,900	181,000	3.3	3.3	5.5
1026794 23:00	273,800	334,600	147,200	169,300	181,800	3.4	3.4	5.6
1027794 0:00	271,900	333,800	146,300	168,300	180,800	3.5	3.5	5.7
1027794 1:00	266,200	332,100	145,000	166,400	178,900	3.6	3.6	5.8
1027794 2:00	270,400	332,900	145,700	168,000	178,300	3.5	3.5	5.8
1027794 3:00	274,600	334,600	147,300	168,700	180,400	3.6	3.6	5.8
1027794 4:00	260,400	330,000	143,700	163,700	178,800	3.5	3.5	5.8
1027794 5:00	254,800	329,700	144,400	163,500	178,900	3.5	3.5	5.7
1027794 6:00	257,900	330,300	144,500	163,700	177,000	3.5	3.5	5.8
1027794 6:00	273,900	334,200	148,100	168,400	180,200	3.5	3.5	5.7
1027794 8:00	273,200	334,100	147,900	168,800	180,100	3.3	3.3	5.7
1027794 10:00	267,700	332,700	146,800	167,100	179,500	3.3	3.3	5.7
1027794 11:00	264,800	331,900	145,700	165,700	179,700	3.4	3.4	5.6
1027794 12:00	262,800	331,500	144,600	165,700	179,200	3.4	3.4	5.7
1027794 13:00	261,900	331,000	143,800	165,400	179,300	3.5	3.5	5.7
1027794 14:00	262,400	330,000	142,800	165,300	179,000	3.4	3.4	5.7
1027794 15:00	268,800	330,300	143,700	165,500	179,500	3.4	3.4	5.7
1027794 16:00	284,900	330,100	143,700	165,100	179,400	3.4	3.4	5.9
1027794 17:00	256,900	330,200	143,200	165,000	179,200	3.4	3.4	5.7
1027794 18:00	252,800	329,100	142,300	163,800	178,200	3.4	3.4	5.7
1027794 19:00	251,200	328,400	142,100	164,900	179,500	3.4	3.4	5.7
1027794 20:00	254,000	328,400	142,500	165,000	179,200	3.5	3.5	5.7
1027794 21:00	257,700	329,800	143,600	166,700	180,900	3.4	3.4	5.8
1027794 22:00	254,800	328,900	142,800	164,900	179,500	3.5	3.5	5.8
1027794 23:00	265,000	331,700	145,200	168,600	181,300	3.5	3.5	5.8
1028794 0:00	262,900	331,200	144,800	168,300	181,000	3.5	3.5	5.8
1028794 1:00	261,800	330,200	146,200	140,700	174,800	3.5	3.5	5.8
1028794 2:00	283,800	336,000	157,000	141,400	165,800	3.5	3.5	5.8
1028794 3:00	259,500	330,900	146,900	165,500	180,600	3.5	3.5	5.7
1028794 4:00	262,800	331,900	146,200	168,600	181,400	3.5	3.5	5.7
1028794 5:00	255,700	330,300	146,300	163,100	180,000	3.5	3.5	5.7
1028794 6:00	241,300	325,500	142,500	161,800	177,000	3.4	3.4	5.6
1028794 7:00	249,900	327,800	144,700	163,700	178,400	3.3	3.3	5.6
1028794 8:00	254,800	330,000	146,200	164,900	179,900	3.3	3.3	5.6
1028794 9:00	249,700	329,300	145,500	161,300	181,200	3.4	3.4	5.6
1028794 10:00	243,000	326,200	143,300	160,100	179,600	3.4	3.4	5.7
1028794 11:00	239,300	325,200	141,700	158,600	178,500	3.4	3.4	5.8
1028794 12:00	242,300	326,200	143,100	159,800	180,100	3.5	3.5	5.8
1028794 13:00	244,300	327,400	142,400	160,700	181,500	3.5	3.5	5.8
1028794 14:00	252,200	329,800	144,400	162,600	182,300	3.5	3.5	5.8
1028794 15:00	254,900	330,100	144,500	162,800	182,200	3.4	3.4	5.7

Unit 1 Boiler Data
Table 6 of 6

	BFP TURBINE STEAM FLOW LP A	BFP TURBINE STEAM FLOW LP B	NO 4 EXTR FLOW	DRAINS LVG HTRS 6A	DRAINS LVG HTRS 6B	O2 IN FLUE LB/HR	O2 IN FLUE AVG	O2 IN FLUE STK %
Description	LB/HR	LB/HR	LB/HR	LB/HR	LB/HR			
10/28/94 16:00	253,100	330,400	144,500	162,800	162,800	3.4	3.4	5.7
10/28/94 17:00	247,000	328,200	142,600	160,200	161,000	3.3	3.3	5.6
10/28/94 18:00	249,000	328,000	143,000	160,400	161,100	3.3	3.3	5.6
10/28/94 19:00	249,800	329,000	143,400	160,900	161,500	3.4	3.4	5.7
10/28/94 20:00	242,500	326,300	141,000	157,900	178,100	3.5	3.5	5.7
10/28/94 21:00	245,500	327,500	142,600	159,600	180,700	3.5	3.5	5.7
10/28/94 22:00	249,500	329,000	143,700	160,600	181,100	3.5	3.5	5.8
10/28/94 23:00	247,200	328,400	143,300	159,800	180,500	3.6	3.6	5.8
10/29/94 0:00	243,700	324,800	141,000	158,700	176,800	3.6	3.6	5.8

Scrubber Data

ScrumMaster Data

Scrubber Data

SCRUBBER DATA OCTOBER 26-28, 1995 SOUTHERN RESEA		FT		FT		FT		FT		FT		PSIG		GROUP #		0		DEGF		DEGF		DEGF		
ID NUMBER	Units	L100H	L100	F150	GROUP #	0	15	L160	L160H	L110	P115	87	LIMESTON	23 HOT	COMMON	49 A 1D FN	49 B 1D FN	49 C 1D FN	49 D 1D FN	49 E 1D FN	49 F 1D FN	49 G 1D FN	49 H 1D FN	
102594 7:07																								
102594 8:00																								
102594 8:02																								
102594 10:02																								
102594 11:08																								
102594 12:02																								
102594 13:02																								
102594 14:02																								
102594 15:10																								
102594 16:02																								
102594 17:01																								
102594 18:04																								
102594 19:07																								
102594 20:00																								
102594 21:06																								
102694 8:01																								
102694 9:09																								
102694 10:01																								
102694 11:08																								
102694 12:05																								
102694 13:07																								
102694 14:05																								
102694 15:31																								
102694 16:09																								
102694 17:03																								
102694 18:09																								
102694 19:06																								
102694 19:59																								
102694 21:08																								
102794 8:10																								
102794 9:03																								
102794 10:15																								
102794 11:14																								
102794 12:02																								
102794 13:43																								
102794 14:02																								
102794 15:10																								
102794 16:00																								

Scrubber Data

Scrubber Data

SCRUBBER DATA OCTOBER 25-28, 1986 SOUTHERN RESEA		INH2O		INH2O		INH2O		INH2O		INH2O		INH2O		INH2O		INH2O		INH2O		INH2O		
Units	ID NUMBER	P221	P241	P261	P281	Z113	Z118	P1101	T690	T691	T692	T693	P110D	M46414	0	0	0	0	0	0	0	0
49 A ID FN OUT ISO DMP S/A PRESS	49 B ID FN OUT ISO DMP S/A PRESS	49 C ID FN OUT ISO DMP S/A PRESS	49 D ID FN OUT ISO DMP S/A PRESS	49 BYPASS DMP SECTION A PRESS	49 BYPASS DMP SECTION B PRESS	GAS FLOW PARAMETE RS	GAS FLOW PARAMETE RS	ID FAN INLET MANIFOLD	ID FAN OUT GAS TEMP	ID FAN OUT GAS TEMP	ID FAN OUT GAS TEMP	ID FAN OUT GAS TEMP	PRESS DIFF	DEGF	DEGF	DEGF	DEGF	DEGF	DEGF	DEGF	DEGF	DEGF
10/25/94 7:07 10/25/94 8:00 10/25/94 9:02 10/25/94 10:02 10/25/94 11:08 10/25/94 12:02 10/25/94 13:02 10/25/94 14:02 10/25/94 15:10	7.83 7.849 7.83 7.804 7.744 7.706 7.703 7.71 7.669	8.794 8.693 8.564 8.546 8.479 8.408 8.41 8.516 8.82	11.65 11.68 11.66 11.80 13.01 11.37 11.77 11.45 11.22	7.83 7.819 7.763 7.721 7.676 7.74 7.729 7.676 7.669	0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0	-31.62 -31.75 -30.945 -31.305 -31.395 -30.945 -31.2 -31.74 -31.605	134.1 133.5 133.5 133.3 132.8 133.4 133.3 133.8 133.3	120.5 122.5 125 125.9 128.1 128 132.7 126.7 126.7	123.6 126.3 127.6 127.9 127.8 128 128 128.3 128.8	0.81 0.78 0.765 0.78 0.78 0.785 0.785 0.825 0.81	CLOSED CLOSED CLOSED CLOSED CLOSED CLOSED CLOSED CLOSED CLOSED								
10/25/94 16:02 10/25/94 17:01 10/25/94 18:04 10/25/94 19:07 10/25/94 20:00	7.669 7.684 7.695 7.71 7.729	8.648 8.621 8.633 8.67 8.64	11.32 11.47 11.43 11.46 11.58	7.635 7.65 7.684 7.729 7.733	0 0 0 0 0	0 0 0 0 0	0 0 0 0 0	-31.785 -31.89 -31.77 -32.1 -32.385	133.4 133.4 133.4 133.1 133.1	126.7 126.6 126.6 126.4 125.9	122.9 122.8 122.6 122.4 122.8	0.785 0.78 0.785 0.81 0.785	CLOSED CLOSED CLOSED CLOSED CLOSED									
10/25/94 21:06 10/25/94 8:01 10/26/94 9:09 10/26/94 10:01	7.774 7.92 7.931 7.894	8.678 8.809 8.651 8.689	11.57 11.82 11.88 11.95	7.71 7.898 7.823 7.789	0 0 0 0	0 0 0 0	0 0 0 0	-32.01 -31.875 -31.89 -31.905	133.2 133.2 133.1 133.1	126.2 123.6 125 123.1	122.5 122.6 122.6 122.4	0.78 0.81 0.785 0.81	CLOSED CLOSED CLOSED CLOSED									
10/26/94 11:08 10/26/94 12:05 10/26/94 13:07 10/26/94 14:05 10/26/94 16:09	7.853 7.888 7.849 7.834 7.815	8.659 8.644 8.561 8.681 8.693	11.80 11.79 12.19 11.61 11.69	7.751 7.795 7.763 7.725 7.744	0 0 0 0 0	0 0 0 0 0	0 0 0 0 0	-31.2 -31.785 -31.545 -31.275 -31.485	133 133.1 133.1 133.2 133.2	126 126.3 126.3 126.4 128.5	122.1 122.8 122.8 122.6 123.3	0.75 0.78 0.75 0.75 0.75	CLOSED CLOSED CLOSED CLOSED CLOSED									
10/26/94 17:03 10/26/94 18:09 10/26/94 19:08 10/26/94 19:59 10/26/94 21:08	7.819 7.826 7.856 7.879 7.819	8.651 8.655 8.764 8.715 8.415	11.69 11.63 11.64 11.69 11.54	7.744 7.748 7.781 7.771 7.71	0 0 0 0 0	0 0 0 0 0	0 0 0 0 0	-31.5 -32.115 -31.685 -31.485 -31.495	133.1 133.5 133.7 133.2 133.1	126.3 126.7 126.5 126.7 126.3	122.1 122.6 122.7 122.7 122.8	0.81 0.78 0.78 0.81 0.75	CLOSED CLOSED CLOSED CLOSED CLOSED									
10/27/94 8:10 10/27/94 9:03 10/27/94 10:15 10/27/94 11:14 10/27/94 12:02	8.085 8.025 7.915 7.826 7.819	8.873 8.64 8.895 8.826 8.415	12 12 11.62 12.12 11.54	7.961 7.958 7.803 7.823 7.71	0 0 0 0 0	0 0 0 0 0	0 0 0 0 0	-31.155 -31.23 -31.245 -31.45 -31.455	132.5 132.9 132.7 132.8 132.3	126.9 126.7 125.6 125.9 126.3	0.75 0.78 0.78 0.78 0.78	CLOSED CLOSED CLOSED CLOSED CLOSED										
10/27/94 13:43 10/27/94 14:02 10/27/94 15:10 10/27/94 16:00	7.826 7.77 7.759 7.74	8.591 8.565 8.558 8.629	11.46 11.45 11.43 11.59	7.721 7.673 7.691 7.65	0 0 0 0	0 0 0 0	0 0 0 0	-31.805 -31.59 -31.485 -31.485	133.1 133.6 133.3 133.1	128.7 128.6 128.4 128.3	0.81 0.78 0.825 0.78	CLOSED CLOSED CLOSED CLOSED										

Scrubber Data

SCRUBBER DATA OCTOBER 25-28, 15 SOUTHERN RESEA																
Units	ID NUMBER	P221	P241	INH2O	INH2O	INH2O	INH2O	INH2O	INH2O	INH2O	INH2O	INH2O	INH2O	INH2O	INH2O	
DESCRIPTION	49 A ID FN OUT ISO DMP S/A PRESS	49 B ID FN OUT ISO DMP S/A PRESS	49 C ID FN OUT ISO DMP S/A PRESS	49 D ID FN OUT ISO DMP S/A PRESS	49 BYPASS DMP SECTION A POSITION	49 BYPASS DMP SECTION B POSITION	PCT									
102794 17:06	8.554	11.61	7.751	8.546	11.68	7.768	0	0	0	0	0	0	0	0	0	0
102794 18:13	8.605	11.46	7.778	8.605	11.46	7.778	0	0	0	0	0	0	0	0	0	0
102794 19:08	8.715	11.49	7.811	8.715	11.49	7.815	0	0	0	0	0	0	0	0	0	0
102794 19:55	8.008	8.85	8.008	8.85	11.88	7.909	0	0	0	0	0	0	0	0	0	0
102894 7:09	8.893	9.95	8.893	8.893	9.95	7.89	0	0	0	0	0	0	0	0	0	0
102894 8:05	7.913	12.06	7.913	7.94	12.06	7.919	0	0	0	0	0	0	0	0	0	0
102894 9:01	7.744	8.243	7.744	7.744	8.243	12.52	0	0	0	0	0	0	0	0	0	0
102894 10:11	7.665	8.19	7.665	7.665	8.19	13.07	0	0	0	0	0	0	0	0	0	0
102894 11:15	7.62	7.999	7.62	7.62	7.999	11.4	7.59	0	0	0	0	0	0	0	0	0
102894 12:11	7.58	8.92	7.58	7.58	8.92	11.98	7.616	0	0	0	0	0	0	0	0	0
102894 13:07	7.62	8.295	7.62	7.62	8.295	11.39	7.556	0	0	0	0	0	0	0	0	0
102894 14:08	7.549	8.803	7.549	7.549	8.803	11.15	7.594	0	0	0	0	0	0	0	0	0
102894 15:14	7.605	8.395	7.605	7.605	8.395	11.23	7.556	0	0	0	0	0	0	0	0	0
102894 17:09	7.598	8.445	7.598	7.598	8.445	11.32	7.5	0	0	0	0	0	0	0	0	0
102894 18:13	7.631	8.411	7.631	7.631	8.411	11.37	7.523	0	0	0	0	0	0	0	0	0

Scrubber Data

SCRUBBER DATA OCTOBER 25-28, 1996		SOUTHERN RESEA Units		INH2O		PPM		INDP		DEGF		DEGF		DEGF		DEGF		DEGF		DEGF	
ID NUMBER	P100	A100	P100ID	T756A	T756B	T756C	T756D	T756E	T756F	T760A	T760B	T760C	T760D	T760E	T760F	T760G	T760H	T760I	T760J	T760K	T760L
DESCRIPTION	49 FLUE GAS IN PRESS	43 FLUE GAS IN SO2	DELTA P ACROSS BY-PASS DAMPER	49 V/A WATER HEATER OUT TEMP	49 V/A REHEAT SYSTEM TEMPERAT URES	49 V/A WATER HEATER OUT TEMP	49 V/A GAS OUT TEMP														
10/25/94 7:07	-18.37	1542	12.97	298.7	47.5	302.7	290.4	0	298.8	292.6	122.6	93.6	118.4	118							
10/25/94 8:00	-18.25	1538	12.87	298.5	47.3	302.4	290.2	0	298.6	292.3	122.3	92.8	117.7	118							
10/25/94 9:02	-18.36	1484	12.72	299.2	47.8	303.3	290.8	0	299.2	292.7	122.1	92.35	118	117.7							
10/25/94 10:02	-18.53	1480	12.85	301.2	49	304.9	291.9	0	300.4	293.8	122	93.3	117.7	117.1							
10/25/94 11:08	-18.73	1475	12.79	304	50.7	307.7	294.5	0	303	296.7	121.9	94.6	117.5	117.3							
10/25/94 12:02	-18.44	1499	12.77	305.5	53.1	309.3	298.4	0	304.2	298.4	121.8	98.45	117.7	117.4							
10/25/94 13:02	-18.64	1475	12.84	305.7	54.8	309.3	298.3	0	304.1	298.1	121.8	97.3	117.5	117							
10/25/94 14:02	-18.79	1472	12.91	304.6	55.6	308	294.3	0	303.1	298.6	121.7	95	117.1	117.1							
10/25/94 15:10	-18.79	1451	12.78	305.1	56.2	308.3	294.7	0	303.6	296.9	121.6	99.4	117.6	116.9							
10/25/94 16:02	-18.81	1454	13.45	304.9	56.6	308.4	298	0	304.9	298.2	121.5	98.75	117.6	116.8							
10/25/94 17:01	-18.31	1435	13.15	304.8	58.8	308.2	298.2	0	309.8	298.1	121.7	98.95	117.5	117.1							
10/25/94 18:04	-18.43	1438	13.31	304.6	58.4	308.1	298.2	0	311.8	298.3	121.6	99	117.5	117.1							
10/25/94 19:07	-18.67	1411	13.3	304.6	55.4	308.3	286.9	0	307.8	298.9	121.9	99	117.3	117.2							
10/25/94 20:00	-19	1442	13.42	304.6	54.2	308.6	297.5	0	306.7	298.6	121.9	98.7	116.7	117.3							
10/25/94 21:08	-18.66	1455	13.38	304.1	53.6	308.1	297.4	0	310.5	298.1	121.6	98.15	117.7	117.1							
10/26/94 0:01	-19.16	1439	12.68	301.8	41.2	306.1	285	0	304.5	298.4	121.8	47.1	118.1	117.4							
10/26/94 9:09	-19.22	1421	12.88	301.3	42.6	305.5	294.1	0	303.7	295.6	122.1	47.15	117.7	117.3							
10/26/94 10:01	-19	1430	12.74	301.1	43.4	305.5	294.5	0	303.8	298.1	122.1	47.55	118.1	117.3							
10/26/94 11:08	-18.78	1431	12.77	301.2	45.8	305.9	285.2	0	304.4	298.7	121.6	49.55	117.7	117.4							
10/26/94 12:05	-18.92	1481	12.88	302.4	47.4	306.8	285.8	0	304.9	297.4	122.1	50.95	117.9	117.4							
10/26/94 13:07	-18.54	1400	12.71	303.4	48.7	307.8	285.3	0	304.9	297.1	122.3	92.1	118	117.4							
10/26/94 14:05	-18.63	1461	12.51	304.9	50.7	308.7	285.7	0	308	297.9	122.2	53.9	117.9	117.1							
10/26/94 18:09	-18.31	1462	13.13	304.1	52	307.9	286.4	0	306.8	298.6	121.9	95.9	117.3	117.1							
10/26/94 19:03	-18.2	1501	13.17	303.3	52.3	307.1	285.7	0	306.3	297.8	121.7	55.65	116.8	117							
10/26/94 19:09	-18.71	1469	13.24	304.8	51.8	308.9	286.3	0	312.9	300.3	121.8	95.8	118	117.3							
10/26/94 19:06	-18.49	1482	13.28	303	51.1	307.1	286.5	0	306.5	298.4	121.6	95.1	118.2	117.5							
10/26/94 19:59	-18.3	1469	13.15	302.5	49.9	308.9	286.8	0	307.7	298.6	122	94.3	117.9	117.5							
10/26/94 21:08	-18.51	1480	13.32	303	48.7	307.4	297.2	0	305.9	298.3	122	53.5	117.7	117.6							
10/27/94 8:10	-18.45	1384	12.88	301.1	35.8	304.4	2917	0	302.8	294.4	121.5	41	117.8	117.3							
10/27/94 9:03	-18.5	1349	12.68	300.6	36.3	305	292.6	0	303.8	295.1	122	40.9	117.9	117.1							
10/27/94 10:15	-18.58	1376	12.9	303.6	40.2	307.3	294.6	0	305.6	298.9	122.5	43.5	116.8	117.3							
10/27/94 11:14	-18.57	1400	12.73	306.2	44	310	298.4	0	307.5	298.9	122.9	47.9	116.9	117.4							
10/27/94 12:02	-18.46	1413	12.8	305.7	47.5	308.9	297.5	0	308	298.6	122.5	51.15	118.3	117.6							
10/27/94 13:43	-18.48	1399	13.22	306.1	54	309.7	297.7	0	313.1	300.5	122.6	55.2	118.1	117.4							
10/27/94 14:02	-18.37	1421	13.41	305.7	53.6	309.2	297.2	0	311	300	122.1	55.95	117.7	117.5							
10/27/94 15:10	-18.75	1400	13.4	304.4	54.8	307.9	295.3	0	310.2	298	122.1	57.2	117.7	117.3							
10/27/94 16:00	-18.39	1391	13.28	306.8	55.5	308.6	297.5	0	310.9	300.4	122.6	57.95	117.3	117.1							

Scrubber Data

SCRUBBER DATA OCTOBER 25-28, 1995 SOUTHERN RÉSEA Units		IN/H2O		PPM		IN/DP		DEGF		DEGF		0 GROUP #		DEGF		DEGF		DEGF	
ID NUMBER	P100	A100	P100ID	T756A	T756B	T756C	T756D	T756E	T756F	T756G	T756H	T756I	T756J	T756K	T756L	T760A	T760B	T760C	T760D
DESCRIPTION	49 FLUE GAS IN PRESS.	43 FLUE GAS IN SO2	DELTA P ACROSS BY-PASS DAMPER	49 V/A WATER HEATER	49 V/A GAS OUT TEMP	49 V/A GAS OUT TEMP	49 V/A GAS OUT TEMP	49 V/A GAS OUT TEMP											
1027794 17.08	-18.18	1406	13.24	306.8	56.2	309.9	297.2	0	310.3	300.2	122.5	58.9	117.4	117.3	117.3	117.4	117.4	117.4	117.4
1027794 18.13	-18.29	1386	13.32	307	58.7	310.5	288.1	0	310.8	301.1	122.3	59.3	117.2	117.3	117.2	117.3	117.2	117.3	117.3
1027794 19.08	-18.43	1405	13.46	307.8	55.5	311.3	289.2	0	311.6	302.1	122.7	58.8	118.1	117.6	118.1	117.6	118.1	117.6	117.6
1027794 19.55	-18.22	1394	13.55	308.6	53.7	311.9	289.5	0	312.2	302.8	123.1	57.9	117.8	117.4	117.8	117.4	117.8	117.4	117.4
1028894 7.09	-18.5	1328	12.73	301.8	40.3	306	294.7	0	306.3	286.5	122.3	46.7	117.7	117.2	117.7	117.2	117.7	117.2	117.2
1028894 8.05	-18.84	1382	12.91	301.2	40	305.6	294	0	305.1	286.1	122.2	45.95	117.1	117.1	117.1	117.1	117.1	117.1	117.1
1028894 9.01	-19.09	1382	12.93	303	41.2	306.9	295.2	0	305.7	287.1	122.4	45.6	117.2	117.3	117.2	117.3	117.2	117.3	117.3
1028894 10.11	-18.85	1427	13.01	306.2	44.6	309.9	297	0	308.6	289.7	122.7	47.85	118.1	117.6	118.1	117.6	118.1	117.6	117.6
1028894 11.15	-19.21	1407	12.88	308.3	50.2	311.7	286.7	0	310.3	301.3	123.2	54.85	118.4	117.8	118.4	117.8	118.4	117.8	117.8
1028894 12.11	-19.28	1508	12.97	307.8	55	311.2	288.4	0	309.8	300.8	123.3	60.25	118.5	117.9	118.5	117.9	118.5	117.9	117.9
1028894 13.07	-19.12	1500	13.03	308.8	56.2	312.4	289.5	0	311.1	302.1	123.4	62.75	118.6	118.1	118.6	118.1	118.6	118.1	118.1
1028894 14.08	-19.14	1514	13.49	308	61.4	311.6	299.7	0	311.9	303.8	123.2	65.55	118.6	117.9	118.6	117.9	118.6	117.9	117.9
1028894 15.14	-18.65	1525	13.58	309.2	63	312.8	301.7	0	314.2	305.8	123.1	66.75	118.7	118.1	118.7	118.1	118.7	118.1	118.1
1028894 15.58	-18.71	1498	13.33	309.3	63.3	313.1	302.3	0	314	306.1	123.1	66.9	117.8	118.1	117.8	118.1	117.8	118.1	117.8
1028894 17.09	-18.4	1484	13.37	308.9	63.8	312.9	302	0	315.2	305.9	123.3	66.85	118	118.1	118	118.1	118	118	118.1
1028894 18.13	-18.43	1475	13.58	309.8	63.8	313.8	302.7	0	315.4	306.8	123.5	66.75	118.7	118.1	118.7	118.1	118.7	118.1	118.1
AVERAGE:																			
Standard Deviation:																			
	-18.61	1442.34	13.08	304.51	51.11	308.33	298.35	0.00	307.62	296.72	122.28	54.89	117.76	117.43	117.76	117.43	117.76	117.43	117.76
	1.71%	3.43%	2.21%	0.94%	13.43%	0.86%	0.84%	1.38%	1.09%	1.04%	1.04%	1.04%	11.52%	0.41%	0.29%	0.29%	0.41%	0.29%	0.29%

Scrubber Data

Scrubber Data

SCRUBBER DATA													
OCTOBER 25-28, 18													
SOUTHERN RESEA		DEGF		DEGF		DEGF		DEGF		DEGF		DEGF	
ID NUMBER	T780E	T780F	T220A	T220B	T220C	T220D	T220E	T220F	T220G	Z104A	Z104B	Z104C	Z104D
DESCRIPTION													
49 V/A GAS OUT TEMP	119.9	121.6	124.2	62.7	117.6	123.6	125.3	123.3	OSNS	0	99.2	93.86	87.86
49 V/A GAS OUT TEMP	119.9	121.6	123.8	63.45	117.8	123.8	123.9	123	OSNS	0	99.2	93.5	87.6
49 V/A GAS OUT TEMP	119.9	121.6	124.6	63.45	119.3	123.7	125.4	123.7	OSNS	0	99.2	93.98	87.93
49 V/A GAS OUT TEMP	120	121.6	124.6	62.85	117.5	123.5	125.2	123.7	OSNS	0	99.2	94.85	87.7
49 V/A GAS OUT TEMP	120	121	124	62.85	117.5	123.5	125.2	123.7	OSNS	0	99.2	94.85	87.7
49 V/A GAS OUT TEMP	119.8	121.4	124.4	52.65	117.7	123.4	124.7	122.8	OSNS	0	99.2	88.5	79.85
49 V/A GAS OUT TEMP	119.6	121.4	124.3	52.65	117.7	123.4	124.7	122.8	OSNS	0	99.2	88.43	79.85
49 V/A GAS OUT TEMP	119.7	121.7	124.8	52.05	116.9	123.3	125.1	123.3	OSNS	0	99.2	89.43	79.9
49 V/A GAS OUT TEMP	120.1	121.9	124.4	53.48	119.7	123.6	125.5	123.6	OSNS	0	99.2	88.48	79.98
49 V/A GAS OUT TEMP	120.4	121.8	125.2	58.13	116.7	124	124.9	122.8	OSNS	0	99.2	89.08	80.45
49 V/A GAS OUT TEMP	120.5	122.6	124.2	61.43	119.9	124.1	125.9	123.8	OSNS	0	99.2	89.5	80.38
49 V/A GAS OUT TEMP	120.4	122.4	125.4	63.83	120.1	124.1	125.7	124	OSNS	0	99.2	90.53	83.38
49 V/A GAS OUT TEMP	120.6	122.5	124.1	66.45	120	124.4	126	124	OSNS	0	99.2	98.68	88.6
49 V/A GAS OUT TEMP	120.8	122.5	124.9	68.4	119.6	124	124.8	123.7	OSNS	0	99.2	98.63	89.23
49 V/A GAS OUT TEMP	120.7	122.2	124.8	69.3	118	124.6	125.9	124	OSNS	0	99.2	95.85	88.85
49 V/A GAS OUT TEMP	120.6	122.5	123.9	70.05	117.8	124.3	125.9	124.3	OSNS	0	99.2	95.03	87.68
49 V/A GAS OUT TEMP	120.4	122.5	125.3	70.28	119.9	124.1	125.6	123.7	OSNS	0	99.2	95.13	87.75
AVERAGE:	119.93	121.80	124.05	59.35	118.70	123.50	124.85	123.41		0.00	99.20	81.72	80.16
Standard Deviation:	0.31%	0.28%	0.69%	0.63%	0.60%	0.35%	0.62%	0.35%		0.00%	2.88%	4.03%	12.51%

Scrutinizer Data

Scrubber Data

SCRUBBER DATA																						
OCTOBER 25-28, 15		SOUTHERN RESEA		Units		PCT		PH		PCT		PH		PCT		PH		PCT		PH		
ID NUMBER	Z104F	INH2O	PM100A	INH2O	PM100B	INH2O	PM100C	INH2O	PM100D	INH2O	PM100E	INH2O	PM100F	INH2O	PM110I	INH2O	AA100A	GROUP # 20	D310A	AA100B	D310B	AA100C
10/27/94 17:08																						
10/27/94 18:13	92.03	5.99	0	6.095	6.145	5.87	5.925	6.075	6.08	6.075	6	5.82	6	5.925	0	5.925	0	5.729	11.63	6.004	4.14	5.715
10/27/94 19:08	93.23	5.785	0	6.035	6.04	5.955	6.01	6.035	6.04	6.04	5.955	6.01	6.04	6.04	6.04	6.04	6.04	5.737	11.66	6.004	4.14	5.721
10/27/94 18:55	93.93	5.99	0	5.95	6.21	6	5.825	6.21	6	5.95	6.21	6	5.825	6	5.95	0	5.705	11.56	6.004	4.14	5.709	
10/28/94 7:09	88.03	5.815	0	5.95	5.975	6.02	6.04	5.95	5.975	5.95	5.975	6.02	5.95	5.975	6.02	5.95	0	5.71	11.72	6.004	4.14	5.804
10/28/94 6:36	88.2	5.875	0	6.03	6.13	5.8	6.115	5.985	5.985	5.985	5.985	6.1	5.985	6.1	5.985	0	5.705	11.59	6.004	4.14	5.881	
10/28/94 9:01	88.25	5.985	0	6.03	6.145	5.95	6.115	5.985	5.985	5.985	5.985	6.1	5.985	6.1	5.985	0	5.705	11.75	6.004	4.14	5.711	
10/28/94 10:11	88.3	5.615	0	6.02	6.02	6.01	5.855	6.02	6.02	6.02	6.01	6.02	6.02	6.02	6.02	6.02	0	5.705	11.65	6.004	4.14	5.711
10/28/94 11:15	88.3	5.875	0	6.02	6.165	6.075	6.195	6.05	6.055	6.055	6.055	6.055	6.055	6.055	6.055	6.055	0	5.705	11.63	6.004	4.14	5.712
10/28/94 12:11	88.35	6.19	0	6.165	6.165	6.075	6.135	5.97	5.985	5.985	5.985	5.985	5.985	5.985	5.985	5.985	0	5.705	11.63	6.004	4.14	5.704
10/28/94 13:07	88.43	6.13	0	6.135	5.97	5.985	5.975	5.985	5.985	5.985	5.985	5.985	5.985	5.985	5.985	5.985	0	5.72	11.55	6.004	4.14	5.708
10/28/94 14:06	96.65	5.986	0.005	5.94	5.98	6.005	5.745	6.005	5.745	6.005	5.745	6.005	5.745	6.005	5.745	6.005	0	5.705	11.7	6.004	4.14	5.705
10/28/94 15:14	96.2	6.095	0.005	5.875	5.785	5.785	6.105	6.05	6.05	6.05	6.05	6.05	6.05	6.05	6.05	6.05	0	5.712	11.28	6.004	4.14	5.7
10/28/94 15:53	98.23	6.07	0.01	6.14	6.23	6.23	5.825	6.23	6.23	6.23	6.23	6.23	6.23	6.23	6.23	6.23	0	5.718	11.52	6.004	4.14	5.732
10/28/94 17:09	95.9	6.175	0.005	5.85	6.035	6.035	5.85	6.035	6.035	6.035	6.035	6.035	6.035	6.035	6.035	6.035	0	5.882	11.39	6.004	4.14	5.732
10/28/94 18:13	95.83	5.885	0	5.93	6.055	6.015	5.9	6.055	6.055	6.055	6.055	6.055	6.055	6.055	6.055	6.055	0	5.704	11.7	6.004	4.14	5.715
AVERAGE:	90.20	5.90	0.00	6.00	6.04	6.01	5.96	6.04	6.04	6.04	6.04	6.04	6.04	6.04	6.04	6.04	0.00	5.71	11.58	6.00	4.14	5.70
Standard Deviation:	3.16%	2.71%	375.58%	1.88%	2.17%	2.08%	1.94%	1.88%	1.94%	1.94%	1.94%	1.94%	1.94%	1.94%	1.94%	1.94%	0.21%	1.04%	1.04%	0.00%	0.00%	4.14%

Scrubber Data

SCRUBBER DATA OCTOBER 26-28, 1996		SOUTHERN RESEA Units		PH		PCT		PH		PCT		GROUP #		0		INH2O										
ID NUMBER	D310C	AA100D	D310D	AA100E	D310E	AA100F	D310F																			
DESCRIPTION	94 V/A RECYCLE DENSITY	87 V/A RECYCLE TK PH																								
10/25/94 7:07	11.74	5.717	12.86	5.724	10.9	5.156	11.94	ES	11.88	ES	11.88	ES	11.94	ES												
10/25/94 8:00	11.65	5.721	13.13	5.703	10.58	5.161	11.88	ES	11.93	ES																
10/25/94 9:02	11.88	5.723	12.97	5.711	10.94	5.153	11.9	ES	11.93	ES																
10/25/94 10:02	11.89	5.714	12.91	5.719	10.97	5.119	12.05	ES	11.93	ES																
10/25/94 11:08	11.92	5.719	13.06	5.706	10.86	5.117	11.76	ES	11.93	ES																
10/25/94 12:02	11.94	5.726	13.19	5.702	10.86	5.117	11.76	ES	11.93	ES																
10/25/94 13:02	11.83	5.732	12.87	5.721	11.1	5.173	11.82	ES	11.93	ES																
10/25/94 14:02	11.88	5.7	12.9	5.721	10.92	5.213	11.77	ES	11.93	ES																
10/25/94 15:10	11.8	5.711	12.95	5.73	10.99	5.208	11.78	ES	11.93	ES																
10/25/94 16:02	11.85	5.715	12.86	5.772	10.83	5.184	12.05	ES	11.93	ES																
10/25/94 17:01	11.71	5.717	13.08	5.712	10.89	5.162	11.83	ES	11.93	ES																
10/25/94 18:04	11.67	5.74	13.22	5.713	10.88	5.202	11.84	ES	11.93	ES																
10/25/94 19:07	11.7	5.725	13.14	5.721	10.88	5.238	11.93	ES																		
10/25/94 20:00	11.75	5.747	13.2	5.716	10.97	5.259	11.92	ES	11.93	ES																
10/25/94 21:08	11.97	5.711	13.23	5.713	10.88	5.246	11.76	ES	11.93	ES																
10/26/94 8:01	11.88	5.039	12.18	5.747	11.05	5.707	11.91	ES	11.93	ES																
10/26/94 9:09	11.91	5.083	12.25	5.746	10.83	5.715	12.08	ES	11.93	ES																
10/26/94 10:01	11.98	5.223	12.18	5.727	10.97	5.708	11.74	ES	11.93	ES																
10/26/94 11:08	11.85	5.198	12.07	5.732	10.75	5.708	11.89	ES	11.93	ES																
10/26/94 12:05	11.93	5.078	12.2	5.687	10.72	5.708	11.89	ES	11.93	ES																
10/26/94 13:07	11.89	5.26	12.26	5.716	10.76	5.708	12.03	ES	11.93	ES																
10/26/94 14:05	11.97	5.147	12.25	5.697	10.89	5.704	11.94	ES	11.93	ES																
10/26/94 16:09	11.79	5.077	12.47	5.71	10.86	5.715	12.07	ES	11.93	ES																
10/26/94 17:03	11.85	5.28	12.43	5.724	10.82	5.718	12.18	ES	11.93	ES																
10/26/94 18:09	11.93	5.049	12.48	5.721	10.84	5.716	12.2	ES	11.93	ES																
10/26/94 19:08	11.9	5.327	12.41	5.71	11.03	5.71	12.13	ES	11.93	ES																
10/26/94 20:15	11.85	5.731	13	5.713	10.88	5.724	11.85	ES	11.93	ES																
10/26/94 21:08	11.9	5.183	12.33	5.727	10.98	5.714	11.89	ES	11.93	ES																
10/27/94 8:10	11.75	5.731	13.09	5.704	10.6	5.03	11.95	ES	11.93	ES																
10/27/94 9:03	11.92	5.758	13.17	5.715	10.85	4.99	11.95	ES	11.93	ES																
10/27/94 10:15	11.85	5.731	13	5.713	10.82	5.12	11.85	ES	11.93	ES																
10/27/94 11:14	11.87	5.726	13.08	5.752	10.83	5.162	12.12	ES	11.93	ES																
10/27/94 12:02	12.01	5.716	13.11	5.71	10.9	5.75	10.9	ES	11.93	ES																
10/27/94 13:43	12.05	5.73	13.09	5.767	10.76	5.045	11.87	ES	11.93	ES																
10/27/94 14:02	11.81	5.723	12.94	5.74	10.59	5.126	11.95	ES	11.93	ES																
10/27/94 15:10	11.8	5.727	13.14	5.71	10.82	5.023	11.85	ES	11.93	ES																
10/27/94 16:00	11.78	5.73	13.01	5.713	10.73	5.138	11.95	ES	11.93	ES																

Scrubber Data

SCRUBBER DATA OCTOBER 26-28, 1994		SOUTHERN RESEA Units		PH		PCT		PH		PCT		0		GROUP #		INH2O		INH2O		INH2O		INH2O		
ID NUMBER	D310C	D310D	AA100D	D310E	AA100E	D310F	AA100F	D310G	AA100G	D310H	AA100H	D310I	AA100I	D310J	AA100J	D310K	AA100K	D310L	AA100L	D310M	AA100M	D310N	AA100N	
DESCRIPTION	94 V/A RECYCLE	87 V/A RECYCLE	94 V/A RECYCLE	87 V/A RECYCLE	94 V/A RECYCLE	87 V/A RECYCLE	94 V/A RECYCLE	87 V/A RECYCLE	94 V/A RECYCLE	87 V/A RECYCLE	94 V/A RECYCLE	87 V/A RECYCLE	94 V/A RECYCLE	87 V/A RECYCLE	94 V/A RECYCLE	87 V/A RECYCLE	94 V/A RECYCLE	87 V/A RECYCLE	94 V/A RECYCLE	87 V/A RECYCLE	94 V/A RECYCLE	87 V/A RECYCLE		
102794 17:08	11.61	5.736	13.04	5.719	10.96	5.07	11.73	ES	1.382	1.532	0	0	1.353	1.346	0	0	1.391	1.578	0	0	1.326	1.381	0	0
102794 18:13	11.68	5.737	13.08	5.721	10.89	5.08	11.9	ES	1.391	1.578	0	0	1.391	1.381	0	0	1.396	1.565	0	0	1.341	1.381	0	0
102794 19:08	11.86	5.724	12.94	5.728	10.89	5.142	11.92	ES	1.396	1.565	0	0	1.396	1.381	0	0	1.376	1.55	0	0	1.326	1.381	0	0
102794 19:55	11.78	5.697	12.88	5.7	10.8	5.124	12.01	ES	1.376	1.55	0	0	1.376	1.381	0	0	1.326	1.55	0	0	1.326	1.381	0	0
102894 7:09	11.99	5.199	12.57	5.671	10.91	5.699	12.02	ES	1.288	1.45	0	0	1.288	1.286	0	0	1.304	1.494	0	0	1.254	1.285	0	0
102894 8:05	11.46	5.104	12.51	5.735	10.89	5.698	12.12	ES	1.304	1.494	0	0	1.304	1.304	0	0	1.346	1.48	0	0	1.263	1.304	0	0
102894 9:01	11.94	5.108	12.34	5.803	10.78	5.698	11.93	ES	1.346	1.48	0	0	1.346	1.346	0	0	1.313	1.48	0	0	1.269	1.304	0	0
102894 10:11	11.97	5.128	12.44	5.693	10.8	5.697	12.13	ES	1.313	1.48	0	0	1.313	1.313	0	0	1.298	1.48	0	0	1.253	1.298	0	0
102894 11:15	12.08	5.127	12.49	5.716	10.93	5.696	11.88	ES	1.304	1.48	0	0	1.304	1.304	0	0	1.279	1.48	0	0	1.279	1.309	0	0
102894 12:11	12.05	5.226	12.45	5.721	11.08	5.695	11.97	ES	1.322	1.517	0	0	1.322	1.322	0	0	1.312	1.512	0	0	1.273	1.335	0	0
102894 13:07	12.03	5.138	12.58	5.745	10.86	5.698	12	ES	1.368	1.48	0	0	1.368	1.368	0	0	1.391	1.604	0	0	1.394	1.398	0	0
102894 14:08	11.98	5.141	12.34	5.711	10.42	5.702	12	ES	1.391	1.604	0	0	1.391	1.391	0	0	1.473	1.549	0	0	1.345	1.414	0	0
102894 15:14	11.77	5.153	12.43	5.71	10.67	5.703	11.88	ES	1.349	1.73	0	0	1.349	1.349	0	0	1.488	1.73	0	0	1.488	1.535	0	0
102894 15:58	11.64	5.192	12.33	5.717	10.94	5.689	11.93	ES	1.367	1.551	0	0	1.367	1.367	0	0	1.512	1.617	0	0	1.477	1.575	0	0
102894 17:09	11.97	5.103	12.32	5.723	10.85	5.685	12.03	ES	1.372	1.577	0	0	1.372	1.372	0	0	1.526	1.471	0	0	1.33	1.374	0	0
102894 18:13	11.99	5.183	12.38	5.73	10.99	5.698	12	ES	1.326	1.55	0	0	1.326	1.326	0	0	1.471	1.55	0	0	1.471	1.55	0	0
AVERAGE:	11.86	5.45	12.72	5.72	10.86	5.41	11.94		1.35	1.51	0.00	0.00	1.35	1.35	0	0	1.481	1.61%	0	0	1.481	1.535	0	0
Standard Deviation:	1.02%	5.38%	2.86%	0.33%	1.21%	5.32%	0.94%		4.61%	2.79%	0.00	0.00	1.35	1.35	0	0	1.481	1.61%	0	0	1.481	1.535	0	0

Scrubber Data

Scrubber Data

Scrubber Data

Scrubber Data

Scrubber Data

SCRUBBER DATA OCTOBER 25-28, 1994		SOUTHERN RESEA		INH2O		INH2O		INH2O		INH2O		INH2O		INH2O		INH2O	
Units	ID NUMBER	PM100B	PM100C	INH2O	INH2O	INH2O	INH2O	INH2O	INH2O	INH2O	INH2O						
				81 V/A MODULE DIFF PRESS	49 V/A MIST ELIM BK 1 DIFF PRESS	49 V/A MIST ELIM BK 2 DIFF PRESS	49 V/A MIST ELIM BK 2 DIFF PRESS										
10/25/94 7:07	0	6.1	5.825	6.34	6.205	0	0	1.355	0	1.234	0	0.932	1.882	0	0.983	1.511	0
10/25/94 8:00	0	5.795	6.21	5.395	5.855	0	0	1.341	0	1.238	0	0.905	1.759	0	1.047	1.475	0
10/25/94 9:02	0	6.114	5.95	5.965	5.92	0	0	1.308	0	1.241	0	0.952	1.268	0	0.994	1.488	0
10/25/94 10:02	0	6.065	6.045	6.105	5.87	0	0	1.309	0	1.207	0	0.915	1.287	0	1.006	1.503	0
10/25/94 11:08	0	5.895	5.955	6.215	5.87	0	0	1.34	0	1.239	0	0.907	1.258	0	0.992	1.431	0
10/25/94 12:02	0	5.89	6.24	6.175	6.025	0	0	1.295	0	1.221	0	0.882	1.285	0	0.994	1.47	0
10/25/94 13:02	0	6.055	5.945	6.055	5.995	0	0	1.309	0	1.233	0	0.885	1.283	0	1.016	1.514	0
10/25/94 14:02	0	6.045	6.225	6.035	5.95	0	0	1.312	0	1.258	0	0.912	1.253	0	1.028	1.51	0
10/25/94 15:10	0	6.17	5.985	6.08	5.865	0	0	1.333	0	1.252	0	0.933	1.28	0	0.999	1.475	0
10/25/94 16:02	0	5.923	5.85	5.775	5.77	0	0	1.353	0	1.298	0	1.024	1.098	0	1.095	1.559	0
10/25/94 17:01	0	5.785	6.155	5.94	6.105	0	0	1.357	0	1.337	0	1.005	0.896	0	1.107	1.548	0
10/25/94 18:04	0	5.955	5.99	5.98	6.07	0	0	1.53	0	1.331	0	0.884	0.905	0	1.086	1.485	0
10/25/94 18:07	0	5.985	6.02	5.9	5.885	0	0	1.367	0	1.349	0	0.889	0.92	0	1.108	1.571	0
10/25/94 20:00	0	6.185	6.04	5.97	5.81	0	0	1.343	0	1.349	0	1.01	0.922	0	1.134	1.477	0
10/25/94 21:08	0	5.765	6.185	6.02	6	0	0	1.387	0	1.347	0	0.967	0.82	0	1.094	1.579	0
10/26/94 8:01	0	6.075	6.045	6.02	6.09	0	0	1.283	0	1.246	0	0.887	1.291	0	0.899	1.448	0
10/26/94 9:09	0	6.125	6.125	5.99	5.88	0	0	1.317	0	1.25	0	0.936	1.324	0	0.981	1.478	0
10/26/94 10:01	0	5.845	5.94	5.97	6.04	0	0	1.344	0	1.268	0	0.895	1.299	0	0.988	1.462	0
10/26/94 11:08	0	5.915	6	5.98	5.92	0	0	1.283	0	1.197	0	0.952	1.247	0	0.974	1.451	0
10/26/94 12:05	0	6.07	5.865	6.015	6.15	0	0	1.311	0	1.268	0	0.923	1.329	0	0.892	1.46	0
10/26/94 13:07	0	5.67	6.145	6.06	6.16	0	0	1.286	0	1.25	0	0.878	1.274	0	0.898	1.484	0
10/26/94 14:05	0	6.005	6.075	5.87	5.76	0	0	1.304	0	1.195	0	0.871	1.289	0	0.984	1.488	0
10/26/94 16:09	0	5.895	6.235	6.105	5.755	0	0	1.311	0	1.289	0	0.951	0.921	0	1.075	1.517	0
10/26/94 17:03	0	6.045	6.175	5.85	6.055	0	0	1.334	0	1.288	0	0.869	0.931	0	1.082	1.51	0
10/26/94 18:09	0	6.095	5.885	5.98	6.095	0	0	1.357	0	1.331	0	1.022	0	0.948	1.085	1.542	0
10/26/94 19:08	0	6.02	6.02	6.025	6.095	0	0	1.352	0	1.298	0	0.983	0.957	0	1.062	1.529	0
10/26/94 19:59	0	5.825	6.185	5.945	6.07	0	0	1.349	0	1.304	0	0.979	0.935	0	1.045	1.521	0
10/26/94 21:08	0	5.975	5.815	5.78	5.84	0	0	1.345	0	1.29	0	0.971	0.937	0	1.079	1.528	0
10/27/94 8:10	0	5.955	5.985	5.99	5.975	0	0	1.302	0	1.233	0	0.869	1.303	0	0.898	1.47	0
10/27/94 9:03	0	6.11	6.265	6.105	6.005	0	0	1.313	0	1.259	0	0.913	1.301	0	1.012	1.467	0
10/27/94 10:15	0	6.125	6.145	5.965	5.985	0	0	1.304	0	1.233	0	0.91	1.4	0	1.033	1.457	0
10/27/94 11:14	0	5.98	6.085	5.985	6.08	0	0	1.339	0	1.252	0	0.898	1.289	0	1.052	1.473	0
10/27/94 12:07	0	6.005	5.88	5.85	5.95	0	0	1.305	0	1.23	0	0.913	1.324	0	1.017	1.481	0
10/27/94 13:43	0	6.105	6.12	5.95	5.85	0	0	1.372	0	1.338	0	1.022	0.955	0	1.122	1.553	0
10/27/94 14:02	0	6.11	6.22	6.065	5.92	0	0	1.355	0	1.306	0	0.977	1.052	0	1.101	1.539	0
10/27/94 15:10	0	5.825	6.08	6.075	5.845	0	0	1.395	0	1.365	0	0.99	1.051	0	1.114	1.534	0
10/27/94 16:00	0	6.085	6.055	6.07	6.135	0	0	1.358	0	1.339	0	1	0.939	1	0.979	1.571	0

Scrubber Data

SCRUBBER DATA		OCTOBER 26-28, 1994		SOUTHERN RESEA		INH2O		INH2O		INH2O		INH2O		INH2O		INH2O		INH2O						
ID NUMBER	Units	INH2O	INH2O	INH2O	INH2O	PM100C	PM100D	PM100E	PM100F	0 GROUP #	24	PD762A	PD762B	PD762C	PD762D	PD762E	PD762F	PD763A	PD763B					
10/27/94 17:08										49 VIA MIST ELIM BK 1 DIFF PRESS	49 VIA MIST ELIM BK 2 DIFF PRESS	49 VIA MIST ELIM BK 2 DIFF PRESS	49 VIA MIST ELIM BK 2 DIFF PRESS											
10/27/94 18:13										5.925	5.96	0	1.392	0	1.353	0.985	0.931	1.045	1.532	0				
10/27/94 19:08										6.145	5.87	5.95	0	1.391	0	1.328	0.981	0.944	1.103	1.578	0			
10/27/94 19:55										6.08	5.82	5.82	0	1.398	0	1.341	0.973	0.943	1.173	1.585	0			
10/28/94 7:09										6.05	6.04	5.95	0	1.378	0	1.328	0.967	0.968	1.071	1.55	0			
10/28/94 8:05										5.99	6.21	6	0	1.288	0	1.234	0.868	0.888	1.289	1.003	1.45	0		
10/28/94 9:01										5.95	5.95	6.02	6.04	0	1.304	0	1.254	0.897	0.897	1.294	1.036	1.494	0	
10/28/94 10:11										6.13	5.4	6.15	5.95	0	1.348	0	1.263	0.893	0.893	1.312	1.027	1.48	0	
10/28/94 11:15										6.145	5.95	6.1	5.95	0	1.313	0	1.269	0.949	0.949	1.319	1.012	1.498	0	
10/28/94 12:11										6.02	6.01	5.85	6.05	0	1.304	0	1.253	0.93	0.93	1.326	1.015	1.488	0	
10/28/94 13:07										6.165	6.075	6.195	5.95	0	1.322	0	1.279	0.925	0.925	1.369	1.008	1.517	0	
10/28/94 14:08										6.135	5.97	5.85	5.95	0	1.368	0	1.273	0.937	0.937	1.357	1.053	1.512	0	
10/28/94 15:14										0.005	5.94	5.96	6.065	5.715	0	1.391	0	1.394	1.044	0.916	1.133	1.604	0	
10/28/94 15:58										0.005	5.875	5.785	6.105	6.05	0	-1.549	0	1.345	1.032	0.893	1.073	1.473	0	
10/28/94 17:09										0.005	6.14	6.23	5.825	5.78	0	1.367	0	1.339	0.997	0.881	1.07	1.551	0	
10/28/94 18:13										0.005	5.65	6.095	5.85	6.03	0	1.372	0	1.311	1.015	0.885	1.045	1.577	0	
AVERAGE:										0.00	6.00	6.04	6.01	5.96	0.00	1.35	0.00	1.28	0.95	1.15	1.04	1.51	0.00	
Standard Deviation										375.58%	1.86%	2.17%	2.08%	1.94%	0.00	4.61%	3.80%	5.04%	20.05%	4.70%	2.79%			

Scrubber Data

SCRUBBER DATA																		
OCTOBER 25-26, 16		SOUTHERN RESEA		INH2O		INH2O		INH2O		INH2O		PH		PH		PH		
Units	ID NUMBER	PD763C	PD763D	PD763E	PD763F	0	GROUP #	25	AA100A	AA100B	AA100C	AA100D	AA100E	AA100F	A100	D310A	D310B	
						49 V/A	49 V/A	49 V/A	49 V/A	MIST ELIM	MIST ELIM	87 V/A	87 V/A	87 V/A	87 V/A	43 FLUE	94 V/A	
						BK 2 DIFF	RECYCLE	RECYCLE	RECYCLE	RECYCLE	GAS IN	RECYCLE						
						PRESS	PRESS	PRESS	PRESS	PRESS	PRESS	TK PH	TK PH	TK PH	TK PH	SO ₂	DENSITY	
						1.315	1.248	1.42	1.567	0	0	5.705	6.004	5.717	5.724	1542	11.74	
						1.284	1.236	1.419	1.601	0	0	5.715	6.004	5.695	5.721	1539	11.47	
						1.262	1.117	1.439	1.504	0	0	5.708	6.004	5.663	5.723	1484	11.58	
						1.258	1.217	1.427	1.558	0	0	5.71	6.004	5.676	5.714	1460	11.55	
						1.309	1.26	1.449	1.561	0	0	5.709	6.004	5.67	5.719	1475	11.53	
						1.259	1.268	1.215	1.431	1.54	0	0	5.715	6.004	5.678	5.726	1489	11.68
						1.283	1.24	1.438	1.589	0	0	5.729	6.004	5.692	5.732	1473	11.48	
						1.305	1.257	1.468	1.593	0	0	5.722	6.004	5.663	5.721	1472	11.62	
						1.299	1.245	1.448	1.61	0	0	5.703	6.004	5.668	5.711	1451	11.51	
						1.298	1.258	1.239	1.66	0	0	5.717	6.004	5.693	5.715	1454	11.37	
						1.379	1.331	1.012	1.755	0	0	5.71	6.004	5.672	5.717	1435	11.53	
						1.353	1.392	0.993	1.793	0	0	5.709	6.004	5.661	5.713	1436	11.5	
						1.408	1.388	1.021	1.795	0	0	5.697	6.004	5.667	5.725	1411	11.65	
						1.387	1.417	1.049	1.792	0	0	5.71	6.004	5.716	5.747	1426	11.49	
						1.411	1.36	1.044	1.743	0	0	5.733	6.004	5.673	5.713	1452	11.51	
						1.272	1.232	1.49	1.581	0	0	5.705	6.004	5.775	5.717	1439	11.62	
						1.293	1.215	1.445	1.581	0	0	5.718	6.004	5.685	5.746	1421	11.65	
						1.288	1.217	1.471	1.58	0	0	5.705	6.004	5.683	5.723	1430	11.61	
						1.282	1.158	1.439	1.52	0	0	5.699	6.004	5.667	5.708	1431	11.57	
						1.281	1.209	1.438	1.577	0	0	5.729	6.004	5.677	5.707	1461	11.84	
						1.293	1.223	1.44	1.542	0	0	5.703	6.004	5.669	5.728	1400	11.68	
						1.253	1.221	1.393	1.529	0	0	5.706	6.004	5.694	5.747	1461	11.79	
						1.351	1.307	1.039	1.654	0	0	5.714	6.004	5.685	5.711	1462	11.59	
						1.314	1.303	1.058	1.63	0	0	5.693	6.004	5.679	5.724	1501	11.43	
						1.364	1.359	1.073	1.703	0	0	5.705	6.004	5.685	5.721	1469	11.58	
						1.363	1.292	1.047	1.697	0	0	5.719	6.004	5.692	5.727	1462	11.52	
						1.331	1.281	1.034	1.69	0	0	5.709	6.004	5.701	5.76	1469	11.8	
						1.347	1.326	1.053	1.673	0	0	5.698	6.004	5.683	5.727	1460	11.68	
						1.267	1.24	1.438	1.562	0	0	5.712	6.004	5.693	5.731	1364	11.55	
						1.201	1.209	1.473	1.543	0	0	5.713	6.004	5.701	5.708	1349	11.53	
						1.261	1.211	1.381	1.582	0	0	5.711	6.004	4.951	5.731	1376	11.34	
						1.274	1.248	1.469	1.577	0	0	5.715	6.004	4.979	5.728	1400	11.61	
						1.269	1.243	1.403	1.578	0	0	5.688	6.004	6.902	5.718	1413	11.34	
						1.369	1.369	1.088	1.728	0	0	5.725	6.004	5.711	5.73	1399	11.78	
						1.357	1.357	1.077	1.72	0	0	5.701	6.004	5.708	5.723	1421	11.4	
						1.375	1.375	1.074	1.708	0	0	5.739	6.004	5.691	5.727	1400	11.49	
						1.373	1.328	1.024	1.757	0	0	5.717	6.004	5.712	5.738	1391	11.68	

Scrubber Data

SCRUBBER DATA													
OCTOBER 26-29, 15													
SOUTHERN RESEA													
Units													
ID NUMBER	INH2O	INH2O	INH2O	INH2O	GROUP #	PH	PH	PH	PH	PPM	PPM	PCF	PCF
102794 17:08	PD763C	PD763D	PD763E	PD763F	0	AA100A	AA100B	AA100C	AA100D	A100	D310A	D310B	
					25								
DESCRIPTION	49 V/A MIST ELIM BK 2 DIFF PRESS	87 VIA RECYCLE TK PH	87 VIA RECYCLE TK PH	87 VIA RECYCLE TK PH	87 VIA RECYCLE TK PH	43 FLUE GAS IN SO2	84 VIA RECYCLE DENSITY	84 VIA RECYCLE DENSITY	84 VIA RECYCLE DENSITY				
102794 18:13	1.368	1.37	1.083	1.756	1.7	0	5.732	6.004	5.715	5.738	5.07	1408	11.63
102794 19:08	1.381	1.376	1.083	1.738	0	0	5.729	6.004	5.73	5.721	5.038	1386	11.65
102794 19:55	1.381	1.355	1.041	1.746	0	0	5.737	6.004	5.724	5.728	5.142	1405	11.68
102894 7:09	1.28	1.211	1.468	1.53	0	0	5.705	6.004	5.708	5.697	5.7	5.124	1394
102894 8:05	1.285	1.232	1.481	1.54	0	0	5.71	6.004	5.604	5.198	5.671	5.899	1328
102894 8:01	1.304	1.231	1.472	1.576	0	0	5.707	6.004	5.604	5.104	5.735	5.898	1382
102894 10:11	1.256	1.271	1.452	1.646	0	0	5.708	6.004	5.711	5.106	5.683	5.899	1382
102894 11:15	1.298	1.28	1.597	1.5	0	0	5.705	6.004	5.712	5.127	5.718	5.898	1407
102894 12:11	1.289	1.263	1.484	1.64	0	0	5.705	6.004	5.704	5.228	5.721	5.895	1508
102894 13:07	1.335	1.289	1.535	1.625	0	0	5.72	6.004	5.708	5.138	5.745	5.898	1500
102894 14:08	-	1.388	1.412	1.036	1.789	0	5.705	6.004	5.705	5.141	5.711	5.702	1514
102894 15:14	-	1.414	1.307	1.017	1.722	0	5.712	6.004	5.7	5.153	5.71	5.703	1525
102894 15:58	-	1.375	1.393	0.959	1.764	0	5.716	6.004	5.732	5.192	5.717	5.889	1498
102894 17:09	-	1.366	1.363	0.997	1.751	0	5.682	6.004	5.732	5.103	5.723	5.885	1464
102894 18:13	-	1.374	1.319	1.004	1.738	0	5.704	6.004	5.715	5.183	5.73	5.898	1475
AVERAGE:	1.32	1.29	1.28	1.65	0.00	5.71	6.00	5.70	5.45	5.72	5.41	142.34	11.58
Standard Deviation:	3.67%	5.51%	16.50%	5.36%	0.21%	0.00%	4.14%	5.36%	0.33%	5.32%	3.43%	1.04%	0.00%

Scrubber Data

Scrubber Data

SCRUBBER DATA															
OCTOBER 26-28, 15															
SOUTHERN RESEA															
Units	PCT	PCT	PCT	PCT	PCT	PCT	PCT	0	26	DEGF	DEGF	PPM	LBS	A110	A101A
ID NUMBER	D310C	D310D	D310E	D310F	D310G	T220A	T220B	T220C	T220D	T220E	T220F	A100	A110	A101A	PPM
DESCRIPTION	94 V/A RECYCLE DENSITY	29 V/A GAS REHEATER OUT TEMP	43 FLUE GAS IN SO2	43 VIA OUT SO2 LBS/ MBTU	43 VIA OUT SO2	PPM									
10/27/94 17:08	11.81	13.04	10.98	10.89	11.9	124.2	62.7	117.8	123.6	117.8	123.6	1406	0.875	104.9	PPM
10/27/94 18:13	11.88	12.94	10.89	11.92	12.01	124.8	63.45	119.3	123.7	123.7	123.7	1405	0.669	104.9	PPM
10/27/94 19:55	11.78	12.89	10.8	12.0	12.01	124	62.85	117.5	123.5	123.5	123.5	1394	0.63	104.9	PPM
10/28/94 7:09	11.99	12.57	10.91	12.02	12.01	124.4	53.18	119.2	123.5	123.5	123.5	1394	0.671	104.9	PPM
10/28/94 8:05	11.46	12.51	10.89	12.12	12.12	124.3	52.65	117.7	123.4	123.4	123.4	1326	0.183	104.9	PPM
10/28/94 9:01	11.84	12.34	10.78	11.93	11.93	124.6	52.65	118.9	123.3	123.3	123.3	1362	0.148	104.9	PPM
10/28/94 10:11	11.97	12.44	10.8	12.13	12.13	124.4	53.46	119.7	123.6	123.6	123.6	1362	0.158	104.9	PPM
10/28/94 11:15	12.08	12.49	10.93	11.86	11.86	125.2	58.13	118.7	124	124	124	1427	0.421	104.9	PPM
10/28/94 12:11	12.05	12.45	11.08	11.97	11.97	124.2	61.43	119.9	124.1	124.1	124.1	1407	0.619	104.9	PPM
10/28/94 13:07	12.03	12.58	10.88	12	12	125.4	63.83	120.1	124.1	124.1	124.1	1508	0.597	104.9	PPM
10/28/94 14:08	11.96	12.34	10.42	12	0	124.1	68.45	120	124.4	124	124	1514	0.63	104.9	PPM
10/28/94 15:14	11.77	12.43	10.67	11.88	0	124.9	68.4	119.6	124	124	124	1525	0.548	104.9	PPM
10/28/94 15:58	11.84	12.33	10.94	11.93	0	124.8	69.3	118	124.6	124.6	124	1486	0.454	104.9	PPM
10/28/94 17:09	11.97	12.32	10.95	12.03	0	123.9	70.06	117.8	124.3	124.3	124.3	1484	0.291	104.9	PPM
10/28/94 18:13	11.99	12.38	10.99	12	0	125.3	70.28	119.9	124.1	124.1	124.1	1475	0.843	104.9	PPM
AVERAGE:	11.86	12.72	10.86	11.94	0.00	124.05	59.35	118.70	123.50	124.85	123.41	1442.34	0.54	104.90	PPM
Standard Deviation	1.02%	2.86%	1.21%	0.94%	0.69%	8.83%	0.60%	0.35%	0.35%	0.62%	0.35%	3.43%	26.07%	0.00%	PPM

Scrubber Data

SCRUBBER DATA													
OCTOBER 25-26, 1995		SOUTHERN RESEA		Units									
ID NUMBER		A101B		A101C		A101D		A101E		A101F		A101G	
DESCRIPTION		43 V/A OUT	43 V/A OUT	43 V/A OUT	43 V/A OUT	43 V/A OUT	43 V/A OUT	43 V/A OUT	43 V/A OUT	43 V/A OUT	43 V/A OUT	87	84
		SO2	SO2	SO2	SO2	SO2	SO2	SO2	SO2	SO2	SO2	LIMESTON	EFFLUENT
		A101B	A101C	A101D	A101E	A101F	A101G	P110I	P100D	A100	A110	PH TK LEVEL	TK LEVEL
		PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	MMBTU	MMBTU
10/25/94 7:07	187.6	186.6	187.6	187.6	186.6	187.6	187.6	186.6	187.6	186.6	187.6	21.71	15.58
10/25/94 8:00	187.6	186.6	187.6	187.6	186.6	187.6	187.6	186.6	187.6	186.6	187.6	18.34	14.41
10/25/94 9:02	187.6	186.6	187.6	187.6	186.6	187.6	187.6	186.6	187.6	186.6	187.6	14.11	14.01
10/25/94 10:02	187.6	186.6	187.6	187.6	186.6	187.6	187.6	186.6	187.6	186.6	187.6	14.78	14.02
10/25/94 11:08	187.6	186.6	187.6	187.6	186.6	187.6	187.6	186.6	187.6	186.6	187.6	22.93	15.29
10/25/94 12:02	187.6	186.6	187.6	187.6	186.6	187.6	187.6	186.6	187.6	186.6	187.6	22.23	15.46
10/25/94 13:02	187.6	186.6	187.6	187.6	186.6	187.6	187.6	186.6	187.6	186.6	187.6	18.54	14.27
10/25/94 14:02	187.6	186.6	187.6	187.6	186.6	187.6	187.6	186.6	187.6	186.6	187.6	23.88	15.2
10/25/94 15:10	187.6	186.6	187.6	187.6	186.6	187.6	187.6	186.6	187.6	186.6	187.6	19.84	14.65
10/25/94 16:02	187.6	186.6	187.6	187.6	186.6	187.6	187.6	186.6	187.6	186.6	187.6	14.86	14.1
10/25/94 17:01	187.6	186.6	187.6	187.6	186.6	187.6	187.6	186.6	187.6	186.6	187.6	21.51	14.27
10/25/94 18:04	187.6	186.6	187.6	187.6	186.6	187.6	187.6	186.6	187.6	186.6	187.6	14.53	14.08
10/25/94 19:07	187.6	186.6	187.6	187.6	186.6	187.6	187.6	186.6	187.6	186.6	187.6	21.89	15.35
10/25/94 20:00	187.6	186.6	187.6	187.6	186.6	187.6	187.6	186.6	187.6	186.6	187.6	20.3	15.6
10/25/94 21:08	187.6	186.6	187.6	187.6	186.6	187.6	187.6	186.6	187.6	186.6	187.6	21.52	14.69
10/26/94 8:01	187.6	186.6	187.6	187.6	186.6	187.6	187.6	186.6	187.6	186.6	187.6	19.89	14.08
10/26/94 9:09	187.6	186.6	187.6	187.6	186.6	187.6	187.6	186.6	187.6	186.6	187.6	22.37	14.75
10/26/94 10:01	187.6	186.6	187.6	187.6	186.6	187.6	187.6	186.6	187.6	186.6	187.6	20.14	15.19
10/26/94 11:08	187.6	186.6	187.6	187.6	186.6	187.6	187.6	186.6	187.6	186.6	187.6	24.88	14.36
10/26/94 12:05	187.6	186.6	187.6	187.6	186.6	187.6	187.6	186.6	187.6	186.6	187.6	21.51	14.92
10/26/94 13:07	187.6	186.6	187.6	187.6	186.6	187.6	187.6	186.6	187.6	186.6	187.6	22.53	15.55
10/26/94 14:05	187.6	186.6	187.6	187.6	186.6	187.6	187.6	186.6	187.6	186.6	187.6	21.89	15.35
10/26/94 16:09	187.6	186.6	187.6	187.6	186.6	187.6	187.6	186.6	187.6	186.6	187.6	20.3	14.13
10/26/94 17:03	187.6	186.6	187.6	187.6	186.6	187.6	187.6	186.6	187.6	186.6	187.6	14.69	14.16
10/26/94 18:09	187.6	186.6	187.6	187.6	186.6	187.6	187.6	186.6	187.6	186.6	187.6	14.08	14.2
10/26/94 19:08	187.6	186.6	187.6	187.6	186.6	187.6	187.6	186.6	187.6	186.6	187.6	15.04	15.04
10/27/94 10:15	187.6	186.6	187.6	187.6	186.6	187.6	187.6	186.6	187.6	186.6	187.6	23.04	14.84
10/27/94 11:14	187.6	186.6	187.6	187.6	186.6	187.6	187.6	186.6	187.6	186.6	187.6	24.78	14.49
10/27/94 12:02	187.6	186.6	187.6	187.6	186.6	187.6	187.6	186.6	187.6	186.6	187.6	22.07	15.5
10/27/94 13:43	187.6	186.6	187.6	187.6	186.6	187.6	187.6	186.6	187.6	186.6	187.6	19.57	15.41
10/27/94 14:02	187.6	186.6	187.6	187.6	186.6	187.6	187.6	186.6	187.6	186.6	187.6	20.73	14.37
10/27/94 15:10	187.6	186.6	187.6	187.6	186.6	187.6	187.6	186.6	187.6	186.6	187.6	23.04	15.25
10/27/94 16:00	187.6	186.6	187.6	187.6	186.6	187.6	187.6	186.6	187.6	186.6	187.6	24.78	14.49
10/27/94 17:03	187.6	186.6	187.6	187.6	186.6	187.6	187.6	186.6	187.6	186.6	187.6	21.61	14.47
10/27/94 18:09	187.6	186.6	187.6	187.6	186.6	187.6	187.6	186.6	187.6	186.6	187.6	24.51	15.43
10/27/94 19:03	187.6	186.6	187.6	187.6	186.6	187.6	187.6	186.6	187.6	186.6	187.6	19.88	13.84
10/27/94 19:59	187.6	186.6	187.6	187.6	186.6	187.6	187.6	186.6	187.6	186.6	187.6	23.28	15.01
10/27/94 21:08	187.6	186.6	187.6	187.6	186.6	187.6	187.6	186.6	187.6	186.6	187.6	14.82	15.31
10/27/94 22:51	187.6	186.6	187.6	187.6	186.6	187.6	187.6	186.6	187.6	186.6	187.6	20.21	14.47
10/27/94 23:43	187.6	186.6	187.6	187.6	186.6	187.6	187.6	186.6	187.6	186.6	187.6	25.4	15.67
10/27/94 24:51	187.6	186.6	187.6	187.6	186.6	187.6	187.6	186.6	187.6	186.6	187.6	20.32	14.35
10/27/94 25:44	187.6	186.6	187.6	187.6	186.6	187.6	187.6	186.6	187.6	186.6	187.6	14.48	15.44
10/27/94 26:11	187.6	186.6	187.6	187.6	186.6	187.6	187.6	186.6	187.6	186.6	187.6	14.48	15.15
10/27/94 26:59	187.6	186.6	187.6	187.6	186.6	187.6	187.6	186.6	187.6	186.6	187.6	23.19	15.14
10/27/94 27:15	187.6	186.6	187.6	187.6	186.6	187.6	187.6	186.6	187.6	186.6	187.6	15.02	15.02
10/27/94 27:51	187.6	186.6	187.6	187.6	186.6	187.6	187.6	186.6	187.6	186.6	187.6	20.19	15.11
10/27/94 28:26	187.6	186.6	187.6	187.6	186.6	187.6	187.6	186.6	187.6	186.6	187.6	15.11	15.16

Scrutinizer Data

Scrubber Data

SCRUBBER DATA OCTOBER 26-28, 1994 SOUTHERN RESEA		PH	GPM	DEGF	PSI	PSIG	PSIG	PSI
ID NUMBER	AA100B							
10/25/94 7:07	87 V/A RECYCLE	84	EFFLUENT FLOW TO THICKENER	TK PH	1364	41.36	143.8	135.2
10/25/94 8:00	TK PH	6.004	6.004	674	41.21	141.5	137.4	99.05
10/25/94 9:02		6.004	6.004	1534	43.91	141.7	128.2	92.1
10/25/94 10:07		6.004	6.004	1214	46.8	146.1	131.9	89.85
10/25/94 11:08		6.004	6.004	2142	50.1	142	126.5	92.05
10/25/94 12:02		6.004	6.004	2278	52.5	141.7	132.1	104.5
10/25/94 13:02		6.004	6.004	1202	53.63	146.6	140.5	103.4
10/25/94 14:02		6.004	6.004	1469	58.55	147.3	135.8	90.95
10/25/94 15:10		6.004	6.004	1425	55.73	145.5	133.2	94.4
10/25/94 16:02		6.004	6.004	2452	56.1	137.6	133.9	93.85
10/25/94 17:01		6.004	6.004	605	54.3	138.6	141.5	100.2
10/25/94 18:04		6.004	6.004	1463	52.01	144	132.7	92.1
10/25/94 19:07		6.004	6.004	1803	49.91	143.3	128.5	86.3
10/25/94 20:00		6.004	6.004	1984	48.49	145.7	139.5	92.6
10/25/94 21:08		6.004	6.004	1312	47.1	144.1	127.7	86.3
10/26/94 8:01		6.004	6.004	577	38.49	143.1	136.7	95.85
10/26/94 9:08		6.004	6.004	594	40.54	138.8	130.1	90.7
10/26/94 10:01		6.004	6.004	2111	43.39	145.3	138.3	98.7
10/26/94 11:08		6.004	6.004	1948	45.75	148.3	142	103.4
10/26/94 12:05		6.004	6.004	578	46.8	145.8	139	98.25
10/26/94 13:07		6.004	6.004	2002	47.93	145.3	137.3	93.95
10/26/94 14:05		6.004	6.004	600	50.36	148.2	141.8	85.1
10/26/94 16:09		6.004	6.004	587	51.49	144	141.8	102.4
10/26/94 17:03		6.004	6.004	1961	50.08	141.9	138.8	98.25
10/26/94 18:09		6.004	6.004	1320	48.11	142.4	138.5	105.6
10/26/94 19:06		6.004	6.004	1740	48.13	146.1	142	91.55
10/26/94 19:59		6.004	6.004	1370	45.04	146.8	137.1	87.8
10/27/94 21:06		6.004	6.004	1493	42.6	143.5	141.8	84.35
10/27/94 8:10		6.004	6.004	2002	33.08	148.7	139.9	102.5
10/27/94 9:03		6.004	6.004	584	35.48	141.8	137.1	83.45
10/27/94 10:15		6.004	6.004	2168	44.61	143.7	129.2	82.05
10/27/94 11:14		6.004	6.004	574	49.2	145.1	132.4	83.8
10/27/94 12:02		6.004	6.004	602	52.24	140.2	145.3	101.4
10/27/94 13:43		6.004	6.004	585	57.9	140.5	130.6	84.45
10/27/94 14:02		6.004	6.004	590	57.3	146	139.9	82.55
10/27/94 15:10		6.004	6.004	1452	60.64	147.4	135.8	88.55
10/27/94 16:00		6.004	6.004	1954	60.15	146	139.8	88.1

Scrubber Data

AIR TOXICS TEST
Data from Unit 1 CEM System

DATE/TIME	SO ₂ , ppm	CO ₂ , %	NO _x , ppm	Flow, scfh	Flow, scfm
10/24/94 0:00	255.8	11.34	960.3	112363448	1872724
10/24/94 1:00	266.1	11.34	912.3	112145280	1869088
10/24/94 2:00	282.5	11.47	959.1	117094144	1951569
10/24/94 3:00	275.3	11.42	963.1	116436416	1940607
10/24/94 4:00	290.6	11.43	947.9	117481176	1958020
10/24/94 5:00	287.0	11.42	942.7	117332096	1955535
10/24/94 6:00	254.0	11.40	928.0	117995920	1966599
10/24/94 7:00	228.8	11.26	909.9	118641248	1977354
10/24/94 8:00	234.6	11.23	905.5	119671768	1994529
10/24/94 9:00	239.3	11.24	914.1	119718528	1995309
10/24/94 10:00	248.7	11.30	914.2	120330688	2005511
10/24/94 11:00	255.1	11.31	900.3	119601608	1993360
10/24/94 12:00	264.6	11.44	957.6	118092256	1968204
10/24/94 13:00	266.5	11.56	974.2	116412368	1940206
10/24/94 14:00	260.6	11.54	977.3	116998408	1949973
10/24/94 15:00	260.4	11.50	979.4	117823696	1963728
10/24/94 16:00	236.1	11.49	974.5	118066456	1967774
10/24/94 17:00	236.2	11.51	965.6	117348368	1955806
10/24/94 18:00	254.7	11.50	949.1	116842272	1947371
10/24/94 19:00	264.8	11.55	947.4	116758752	1945979
10/24/94 20:00	266.0	11.52	917.0	117698480	1961641
10/24/94 21:00	256.6	11.41	886.6	116450040	1940834
10/24/94 22:00	247.1	11.25	809.2	113389328	1889822
10/24/94 23:00	241.4	11.07	765.0	110840800	1847347
10/25/94 0:00	247.5	11.03	768.8	112443120	1874052
10/25/94 1:00	264.8	11.20	821.5	117376248	1956271
10/25/94 2:00	266.7	11.23	821.8	116363072	1939385
10/25/94 3:00	277.9	11.33	863.8	119310904	1988515
10/25/94 4:00	275.0	11.46	900.2	117842528	1964042
10/25/94 5:00	259.5	11.59	936.4	115420432	1923674
10/25/94 6:00	258.1	11.54	946.3	115811472	1930191
10/25/94 7:00	256.1	11.44	963.8	115528872	1925481
10/25/94 8:00	250.8	11.46	986.7	115284440	1921407
10/25/94 9:00	249.5	11.43	1008.3	116257968	1937633
10/25/94 10:00	245.5	11.49	1050.6	116007112	1933452
10/25/94 11:00	239.3	11.51	1060.8	115938880	1932315
10/25/94 12:00	242.5	11.47	1077.7	116766832	1946114
10/25/94 13:00	243.4	11.49	1062.9	117580904	1959682
10/25/94 14:00	240.6	11.46	1055.8	116727576	1945460
10/25/94 15:00	243.2	11.53	1066.5	116264000	1937733
10/25/94 16:00	239.8	11.54	1054.5	116276672	1937945
10/25/94 17:00	237.6	11.49	1054.3	116746112	1945769
10/25/94 18:00	236.1	11.48	1082.0	117361784	1956030
10/25/94 19:00	232.1	11.53	1105.8	115707584	1928460
10/25/94 20:00	221.2	11.49	1097.7	116849328	1947489
10/25/94 21:00	203.2	11.55	1075.3	115574160	1926236
10/25/94 22:00	214.1	11.40	1048.0	117693856	1961564

AIR TOXICS TEST
Data from Unit 1 CEM System

DATE/TIME	SO ₂ , ppm	CO ₂ , %	NO _x , ppm	Flow, scfh	Flow, scfm
10/25/94 23:00	221.8	11.33	1034.0	117094352	1951573
10/26/94 0:00	226.0	11.23	969.9	114089408	1901490
10/26/94 1:00	232.9	11.17	964.4	113054048	1884234
10/26/94 2:00	235.2	11.05	912.9	113670872	1894515
10/26/94 3:00	249.8	11.33	980.9	117548344	1959139
10/26/94 4:00	250.5	11.39	1004.6	118661904	1977698
10/26/94 5:00	252.1	11.34	979.4	118001920	1866699
10/26/94 6:00	253.0	11.46	1025.4	118373152	1972886
10/26/94 7:00	255.8	11.37	1019.1	116782688	1946378
10/26/94 8:00	258.7	11.39	1021.0	116569072	1942818
10/26/94 9:00	258.7	11.49	1045.0	115857752	1930963
10/26/94 10:00	258.3	11.50	1049.9	115146904	1919115
10/26/94 11:00	259.4	11.56	1068.9	114988336	1916472
10/26/94 12:00	255.9	11.53	1078.7	115289968	1921499
10/26/94 13:00	256.9	11.52	1093.0	114867104	1914452
10/26/94 14:00	260.6	11.56	1088.7	115371752	1922863
10/26/94 15:00	260.1	11.57	1072.8	114581440	1909691
10/26/94 16:00	262.7	11.57	1083.1	115940144	1932336
10/26/94 17:00	258.6	11.66	1130.2	115293624	1921560
10/26/94 18:00	257.4	11.65	1119.9	115292256	1921538
10/26/94 19:00	255.7	11.66	1133.8	114801872	1913365
10/26/94 20:00	232.4	11.62	1122.1	115313496	1921892
10/26/94 21:00	233.4	11.55	1119.7	115695712	1928262
10/26/94 22:00	244.1	11.44	1096.0	117450616	1957510
10/26/94 23:00	248.7	11.39	1088.2	117832392	1963873
10/27/94 0:00	253.2	11.39	1053.7	117403200	1956720
10/27/94 1:00	257.8	11.37	1059.0	118114648	1968577
10/27/94 2:00	264.7	11.41	1067.4	117013264	1950221
10/27/94 3:00	265.8	11.44	1071.8	117378352	1956306
10/27/94 4:00	268.4	11.40	1061.3	117857792	1964297
10/27/94 5:00	268.8	11.44	1062.1	118099920	1968332
10/27/94 6:00	267.5	11.48	1071.1	117660432	1961007
10/27/94 7:00	293.3	11.39	1067.3	116085912	1934765
10/27/94 8:00	281.4	11.44	1079.2	116722304	1945372
10/27/94 9:00	224.6	11.50	1083.5	115738960	1928983
10/27/94 10:00	220.2	11.46	1080.5	116526264	1942104
10/27/94 11:00	228.6	11.41	1090.7	116637136	1943952
10/27/94 12:00				116282400	1938040
10/27/94 13:00	242.9	11.46	1136.4	115880328	1931339
10/27/94 14:00	242.8	11.46	1118.6	116286912	1938115
10/27/94 15:00	240.7	11.48	1154.9	115559552	1925993
10/27/94 16:00	239.8	11.51	1179.5	115631888	1927198
10/27/94 17:00	241.0	11.47	1167.0	117072664	1951211
10/27/94 18:00	239.1	11.44	1153.4	117512512	1958542
10/27/94 19:00	219.6	11.43	1146.2	117983864	1966398
10/27/94 20:00	217.5	11.41	1132.0	117329696	1955495
10/27/94 21:00	229.6	11.42	1117.3	118127376	1968790

AIR TOXICS TEST
Data from Unit 1 CEM System

DATE/TIME	SO ₂ , ppm	CO ₂ , %	NO _x , ppm	Flow, scfh	Flow, scfm
10/27/94 22:00	234.4	11.38	1090.6	118842856	1980714
10/27/94 23:00	237.3	11.41	1091.0	118544352	1975739
10/28/94 0:00	232.5	11.43	1133.5	118887424	1981457
10/28/94 1:00	244.1	11.45	1125.4	118064792	1967747
10/28/94 2:00	246.6	11.46	1116.6	118353008	1972550
10/28/94 3:00	246.5	11.50	1104.5	117918272	1965305
10/28/94 4:00	244.3	11.59	1128.6	116340896	1939015
10/28/94 5:00	245.2	11.60	1155.2	115922240	1932037
10/28/94 6:00	212.2	11.65	1177.3	115845432	1930757
10/28/94 7:00	209.8	11.46	1163.8	116531168	1942186
10/28/94 8:00	209.0	11.44	1136.5	117153256	1952554
10/28/94 9:00	210.7	11.45	1136.7	117427680	1957128
10/28/94 10:00	214.6	11.45	1110.3	118286624	1971444
10/28/94 11:00					
10/28/94 12:00	221.6	11.40	1108.1	118812776	1980213
10/28/94 13:00	225.4	11.52	1120.3	117588664	1959811
10/28/94 14:00	222.6	11.58	1141.9	116557656	1942628
10/28/94 15:00	221.3	11.59	1165.8	116298432	1938307
10/28/94 16:00	221.4	11.59	1180.7	116291552	1938193
10/28/94 17:00	218.6	11.53	1171.1	116680192	1944670
10/28/94 18:00	213.3	11.47	1137.4	115299648	1921661
10/28/94 19:00	214.2	11.48	1133.3	116677008	1944617
10/28/94 20:00	218.0	11.43	1118.9	117535088	1958918
10/28/94 21:00	218.7	11.41	1118.7	116802528	1946709
10/28/94 22:00	218.2	11.37	1110.7	117472016	1957867
10/28/94 23:00	218.7	11.33	1082.2	119050656	1984178

AVERAGE	244.8	11.44	1041.4	116691816	1944864
MAXIMUM	293.3	11.66	1180.7	120330688	2005511
MINIMUM	203.2	11.03	765.0	110840800	1847347

APPENDIX E

DETAILED RESULTS OF MEASUREMENTS OF METALS

Table E-1.
Solid-Phase Concentrations of Metals at the Inlet of the E Scrubber Module
(M29 front half concentrations, in $\mu\text{g}/\text{Nm}^3$ or mg/Nm^3 , as indicated; corrected by blank train data)

	10/25		10/26		10/27		10/28		Avg.	Std. Dev.	Rel. Std. Dev.
	AM	PM	AM	PM	AM	PM	AM	PM			
Trace metals ($\mu\text{g}/\text{Nm}^3$)											
As	187	232	106	209	186	149	223	198	198	28	14
B	1055	1197	889	1229	1164	971	1107	1134	1123	88	8
Ba	664	841	673	854	833	660	781	743	768	82	11
Be	25.7	30.1	23.5	33.6	32.1	24.7	28.9	28.6	29.1	3.2	11
Cd	22.4	27.1	24.7	23.7	25.7	16.9	20.3	19.5	22.2	3.6	16
Co	54.2	60.8	51.8	52.1	64.4	57.9	60.7	57.9	58.3	4.2	7
Cr	379	1001	325	458	539	342	418	385	503	228	45
Cu	247	303	216	297	270	202	259	238	259	35	13
Hg	0.09	0.10	0.23	0.10	0.10	0.06	0.08	0.06	0.08	0.02	21
Mn	352	443	341	440	439	342	400	386	400	42	11
Mo	233	262	140	213	251	172	207	209	221	30	14
Ni	232	386	209	267	316	200	238	222	266	65	24
Pb	232	260	180	215	256	185	228	224	229	26	11
Sb	33.0	69.4	12.3	64.5	38.3	16.4	43.8	47.6	44.7	18.2	41
Se	15.1	12.8	18.3	26.6	140.4	97.5	17.3	17.3	46.7	51.1	109
V	1256	1685	1123	1564	1425	1093	1242	1054	1331	236	18
Major metals (mg/Nm^3)											
Al	165	216	174	223	215	168	209	198	199	24	12
Ca	29.7	39.4	28.0	39.9	36.6	29.7	34.6	33.9	34.9	4.2	12
Fe	233	295	246	280	285	212	262	257	260	30	11
Mg	10.3	13.4	10.4	13.7	13.0	10.2	12.5	11.9	12.1	1.4	12
Ti	14.0	18.3	14.2	18.7	18.3	14.4	17.8	17.0	16.9	2.0	12
Footnote to Avg. Based on data from seven runs because of a ruptured filter in the run on 10/26 AM.											

Table E-2.
Vapor-Phase Concentrations of Metals at the
Inlet of the E Scrubber Module (M29 back half concentrations,
in $\mu\text{g}/\text{Nm}^3$ or mg/Nm^3 , as indicated; corrected by blank train data)

	10/25		10/26		10/27		10/28		Avg.	Std. Dev.	Rel. St Dev.
	AM	PM	AM	PM	AM	PM	AM	PM			
Trace metals ($\mu\text{g}/\text{Nm}^3$)											
As	0.08	0.15	25.8	0.27	-0.11	-0.02	0.04	0.05	0.07	0.12	180
B	6284	6214	4605	5313	5840	8034	6644	6467	6175	844	14
Ba	1.11	0.70	21.9	0.19	1.90	0.59	0.51	1.67	3.57	0.63	18
Be	0.27	0.16	2.10	-0.03	-0.07	-0.06	-0.06	-0.07	0.28	0.14	49
Cd	0.34	0.08	2.71	0.30	0.74	0.29	-0.04	0.32	0.59	0.25	42
Co	0.19	0.16	2.30	0.13	0.26	-0.23	0.71	-0.28	0.41	0.33	81
Cr	1.10	-0.37	49.3	-1.11	0.65	0.04	-1.62	-0.80	5.80	0.97	16
Cu	1.31	2.67	25.5	-0.16	0.35	3.62	1.49	0.05	4.36	1.41	32
Hg	11.65	9.87	8.97	8.67	11.07	10.29	9.52	9.80	9.98	0.99	10
Mn	1.33	2.02	17.0	67.7	1.3	8.3	0.9	12.2	13.8	24.3	176
Mo	-0.14	-0.04	44.1	0.24	-0.04	-0.03	0.87	-0.04	5.61	0.35	6
Ni	1.93	1.11	10.1	1.68	2.31	1.63	1.20	1.44	2.67	0.42	16
Pb	-1.11	-0.47	15.4	-0.76	-0.67	-0.37	-0.70	-0.21	1.39	0.30	21
Sb	1.14	2.57	2.1	0.51	1.74	3.95	-2.61	-2.40	0.87	2.45	282
Se	12.59	18.28	11.2	5.61	4.04	9.55	8.53	60.95	16.34	19.91	122
V	0.44	-0.06	152	0.17	-0.17	-0.03	-0.20	0.18	19.0	0.23	1
Major metals (mg/Nm^3)											
Al	0.13	0.07	3.42	0.03	0.02	0.06	0.05	0.06	0.48	0.03	7
Ca	0.47	0.29	2.42	0.05	0.12	0.23	0.20	0.13	0.49	0.14	28
Fe	0.13	0.05	6.30	0.04	0.04	0.05	0.05	0.06	0.84	0.03	4
Mg	0.03	0.02	0.37	0.00	0.01	0.01	0.02	0.05	0.06	0.01	22
Ti	0.01	0.00	0.53	0.00	0.00	0.00	0.00	0.00	0.07	0.00	3

Table E-3.
Total Metal Concentrations at the Inlet of the Inlet of the E Scrubber Module
(Sums of M29 front and back half concentrations, in $\mu\text{g}/\text{Nm}^3$ or mg/Nm^3
as indicated; corrected by blank train data)

	10/25		10/26		10/27		10/28		Avg.	Std. Dev.	Rel.Std. Dev.
	AM Run 1	PM Run 2	AM Run 3	PM Run 4	AM Run 5	PM Run 6	AM Run 7	PM Run 8			
Trace metals ($\mu\text{g}/\text{Nm}^3$)											
As	187	232	132	209	186	149	223	198	198	28	14
B	7339	7412	5494	6542	7004	9005	7751	7601	7522	767	10
Ba	665	842	695	855	835	680	782	744	769	82	11
Be	26.0	30.3	25.6	33.5	32.0	24.6	28.9	28.5	29.1	3.2	11
Cd	22.8	27.2	27.4	24.0	26.4	17.2	20.2	19.8	22.5	3.7	16
Co	54.4	61.0	54.1	52.2	64.7	57.6	61.4	57.6	58.4	4.3	7
Cr	380	1000	374	457	539	342	417	384	503	228	45
Cu	248	306	241	296	271	206	261	238	261	34	13
Hg	11.74	9.97	9.20	8.77	11.16	10.34	9.60	9.86	10.20	0.99	10
Mn	354	445	358	508	440	350	401	399	414	56	13
Mo	233	262	185	213	251	172	208	209	221	30	14
Ni	234	387	219	268	318	202	239	224	267	65	24
Pb	231	260	195	214	256	184	227	224	228	25	11
Sb	34.1	72.0	14.4	65.0	40.0	20.3	41.2	45.2	45.4	17.8	39
Se	27.7	31.0	29.5	32.2	144.4	107.1	25.9	78.2	63.8	47.2	74
V	1256	1685	1275	1564	1425	1093	1241	1054	1331	236	18
Major metals (mg/Nm^3)											
Al	165	216	177	223	215	168	209	198	199	24	12
Ca	30.2	39.7	30.5	40.0	36.8	29.9	34.8	34.1	35.1	4.1	12
Fe	233	295	253	280	285	212	262	257	260	30	11
Mg	10.3	13.4	10.8	13.7	13.0	10.2	12.5	12.0	12.2	1.4	12
Ti	14.0	18.3	14.7	18.7	18.3	14.4	17.8	17.0	16.9	2.0	12

Table E-4.
Solid-Phase Concentrations of Metals at the Outlet of the E Scrubber Module
(M29 front half concentrations, in $\mu\text{g}/\text{Nm}^3$ or mg/Nm^3 , as indicated; corrected by blank train data)

	10/25		10/26		10/27		10/28		Avg.	Std. Dev.	Rel. Dev.
	AM	PM	AM	PM	AM	PM	AM	PM			
Trace metals ($\mu\text{g}/\text{Nm}^3$)											
As	27.6	27.6	26.7	24.0	29.2	29.3	31.3	27.8	27.9	2.1	7
B	36.4	40.3	43.0	44.5	57.4	47.9	37.0	34.6	42.7	7.5	17
Ba	42.0	45.7	45.1	37.9	39.0	40.2	41.8	45.6	42.2	3.0	7
Be	1.06	1.08	1.17	1.10	1.15	1.13	1.05	0.97	1.09	0.06	5
Cd	4.06	4.23	2.25	1.18	0.98	0.43	1.27	0.32	1.84	1.54	83
Co	-0.24	0.04	-0.22	-0.11	-0.34	-0.23	-0.44	-0.36	-0.24	0.15	-62
Cr	32.1	30.6	31.9	32.5	31.3	40.1	35.7	37.7	34.0	3.4	10
Cu	13.5	12.8	12.3	14.6	12.5	13.3	13.5	13.0	13.2	0.7	5
Hg	0.05	0.04	0.02	0.01	0.01	0.02	0.02	0.00	0.02	0.02	69
Mn	4.37	2.81	5.31	1.79	2.33	2.71	1.67	6.47	3.43	1.76	51
Mo	46.7	45.9	47.4	44.1	46.5	45.8	45.9	46.1	46.1	1.0	2
Ni	3.86	3.46	2.00	1.07	1.66	2.01	0.75	2.34	2.14	1.07	50
Pb	20.0	18.4	19.2	18.4	20.5	21.2	24.6	18.9	20.1	2.1	10
Sb	-0.82	0.00	-0.06	0.26	2.92	3.28	-2.20	-1.75	0.20	1.98	973
Se	16.5	39.9	59.9	30.2	42.7	37.8	-2.5	35.2	32.5	18.6	57
V	9.4	110.1	119.9	116.0	114.8	118.2	112.2	89.1	98.7	37.4	37
Major metals (mg/Nm^3)											
Al	1.32	1.19	1.18	1.26	1.12	1.17	1.22	1.03	1.18	0.09	7
Ca	2.97	1.04	1.71	1.03	1.84	1.18	2.02	1.11	1.61	0.5	41
Fe	3.73	3.49	3.74	3.76	3.31	3.55	3.58	3.18	3.54	0	5
Mg	0.287	0.197	0.236	0.193	0.227	0.197	0.237	0.168	0.218	0.031	17
Ti	0.257	0.260	0.267	0.284	0.243	0.271	0.273	0.234	0.261	0.016	6

Table E-5.
Vapor-Phase Concentrations of Metals at the Outlet of the E Scrubber Module
(M29 back half concentrations, in $\mu\text{g}/\text{Nm}^3$ or mg/Nm^3 , as indicated; corrected by blank train data)

	10/25		10/26		10/27		10/28		Avg.	Std. Dev.	Rel. Std. Dev.
	AM	PM	AM	PM	AM	PM	AM	PM			
Trace metals ($\mu\text{g}/\text{Nm}^3$)											
As	0.172	0.070	-0.08	-0.10	0.090	0.089	0.139	0.038	0.053	0.089	169
B	492	451	247	413	414	358	425	375	397	69	17
Ba	0.662	0.765	0.506	1.773	0.253	0.581	0.184	-0.41	0.540	0.580	107
Be	-0.07	-0.07	-0.05	-0.08	-0.08	-0.05	-0.09	-0.05	-0.07	0.016	-23
Cd	1.766	0.108	0.526	0.148	-0.10	0.691	-0.15	0.469	0.433	0.577	133
Co	-5.03	-3.53	-4.22	-5.72	-4.60	-4.57	-5.37	-3.77	-4.60	0.707	-15
Cr	4.73	2.53	7.16	3.87	2.97	3.55	2.94	2.35	3.763	1.473	39
Cu	4.89	1.70	4.37	1.89	-0.08	0.49	0.89	-0.71	1.679	1.887	112
Hg	5.61	5.58	5.02	5.12	5.75	5.67	5.98	5.49	5.528	0.298	5
Mn	1.29	0.42	4.19	3.10	3.49	1.38	1.45	0.91	2.027	1.278	63
Mo	0.39	0.12	0.10	0.69	0.34	0.43	-0.06	-0.03	0.247	0.243	98
Ni	1.36	0.84	7.50	1.53	0.22	0.88	1.23	0.43	1.748	2.212	127
Pb	1.54	1.23	1.22	1.63	1.21	1.64	1.59	1.61	1.458	0.188	13
Sb	-0.73	-1.70	3.441	-2.14	-1.65	2.43	-1.70	0.365	-0.21	1.974	-934
Se	4.88	4.42	6.061	24.03	23.81	10.44	14.12	16.99	13.09	7.498	57
V	0.43	-0.16	0.933	0.59	0.75	1.60	-0.14	-0.29	0.462	0.606	131
Major metals (mg/Nm^3)											
Al	0.01	0.04	0.013	0.00	0.01	0.00	0.02	0.00	0.011	0.014	126
Ca	0.064	0.036	0.048	0.029	0.036	0.017	0.044	0.019	0.036	0.014	39
Fe	0.00	-0.02	0.019	0.02	-0.01	-0.02	-0.02	-0.03	-0.01	0.018	-232
Mg	0.01	0.01	0.007	0.01	0.00	0.00	0.00	0.00	0.005	0.003	70
Ti	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.000	847

Table E-6.
Total Metal Concentrations at the Outlet of the E Scrubber Module
**(Sums of M29 front and back half concentrations, in $\mu\text{g}/\text{Nm}^3$ or mg/Nm^3 as indicated;
 corrected by blank train data)**

	10/25		10/26		10/27		10/28		Avg.	Std. Dev.	Rel. Std. Dev.
	AM	PM	AM	PM	AM	PM	AM	PM			
Trace metals ($\mu\text{g}/\text{Nm}^3$)											
As	27.8	27.7	26.6	23.9	29.3	29.4	31.5	27.9	28.0	2.1	7
B	528	491	290	458	471	404	462	410	439	68	15
Ba	42.6	46.5	45.6	39.7	39.2	40.8	42.0	45.2	42.7	2.6	6
Be	0.99	1.01	1.13	1.02	1.07	1.08	0.96	0.92	1.0	0.1	6
Cd	5.82	4.34	2.78	1.32	0.89	1.13	1.12	0.79	2.3	1.8	77
Co	-5.27	-3.50	-4.44	-5.83	-4.95	-4.81	-5.81	-4.13	-4.8	0.8	-16
Cr	36.8	33.1	39.1	36.3	34.2	43.6	38.6	40.1	37.7	3.1	8
Cu	18.4	14.5	16.7	16.5	12.4	13.8	14.4	12.3	14.9	2.0	14
Hg	5.66	5.62	5.04	5.13	5.76	5.69	6.00	5.50	5.6	0.3	5
Mn	5.66	3.23	9.50	4.89	5.81	4.09	3.12	7.38	5.5	2.0	37
Mo	47.1	46.1	47.5	44.8	46.8	46.2	45.9	46.0	46.3	0.8	2
Ni	5.22	4.30	9.50	2.60	1.88	2.89	1.98	2.77	3.9	2.4	61
Pb	21.52	19.64	20.44	20.01	21.69	22.83	26.22	20.50	21.6	2.0	9
Sb	-1.55	-1.70	3.38	-1.88	1.27	5.71	-3.90	-1.39	0.0	3.0	-3945
Se	21.4	44.3	65.9	54.2	66.5	48.2	11.7	52.2	45.6	18.4	40
V	9.8	110.0	120.8	116.6	115.5	119.8	112.0	88.8	99.2	35.1	35
Major metals (mg/Nm^3)											
Al	1.33	1.23	1.19	1.26	1.13	1.17	1.23	1.03	1.2	0.1	7
Ca	3.03	1.07	1.75	1.05	1.88	1.19	2.06	1.13	1.6	0.6	39
Fe	3.73	3.47	3.76	3.78	3.30	3.53	3.56	3.15	3.5	0.2	6
Mg	0.297	0.204	0.243	0.199	0.228	0.200	0.242	0.167	0.2	0.0	17
Ti	0.257	0.259	0.268	0.285	0.243	0.271	0.273	0.233	0.3	0.0	6

Table E-7.
Solid-Phase Concentrations of Metals in the Stack
(M29 front half concentrations, in $\mu\text{g}/\text{Nm}^3$ or mg/Nm^3
as indicated; corrected by blank train data)

	10/25	10/26	10/27	10/28	Avg.	Std. Dev.	Relative Std.Dev.
Trace metals ($\mu\text{g}/\text{Nm}^3$)							
As	30.3	24.9	35.6	34.7	31.4	4.2	14
B	217	38	39	43	85	77	91
Ba	39.5	41.2	41.2	40.8	40.7	0.7	2
Be	1.03	0.93	1.11	1.13	1.05	0.08	7
Cd	3.55	2.45	3.18	2.01	2.80	0.60	22
Co	-0.53	1.00	4.52	-0.26	1.18	2.01	170
Cr	28.27	29.40	49.97	65.84	43.37	15.58	36
Cu	12.71	10.84	13.86	19.47	14.22	3.22	23
Hg	0.06	0.02	0.02	0.02	0.03	0.02	56
Mn	2.03	8.22	6.01	8.43	6.17	2.57	42
Mo	45.5	38.1	47.7	52.5	45.9	5.2	11
Ni	2.76	3.98	12.60	21.70	10.26	7.61	74
Pb	20.0	15.6	1.6	19.9	14.3	7.5	53
Sb	-0.72	-5.17	-5.97	2.90	-2.24	3.58	-160
Se	16.9	30.1	31.6	40.0	29.7	8.3	28
V	106.4	97.5	117.0	105.4	106.6	7.0	7
Major metals (mg/Nm^3)							
Al	1.04	1.03	1.42	1.41	1.22	0.19	15
Ca	0.85	0.82	0.89	0.91	0.87	0.03	4
Fe	3.17	3.17	3.60	3.66	3.40	0.23	7
Mg	0.165	0.171	0.203	0.198	0.185	0.017	9
Ti	0.224	0.225	0.263	0.263	0.244	0.019	8

Table E-8.
Vapor Concentrations of Metals in the Stack
(M29 back half concentrations, in $\mu\text{g}/\text{Nm}^3$ or mg/Nm^3
as indicated; corrected by blank train data)

	10/25	10/26	10/27	10/28	Avg.	Std.Dev.	Relative Std.Dev.
Trace metals ($\mu\text{g}/\text{Nm}^3$)							
As	0.071	1.164	0.421	-0.012	0.411	0.464	113
B	366	401	370	352	372	18	5
Ba	0.192	5.328	-0.060	-0.171	1.322	2.316	175
Be	-0.060	-0.069	-0.086	-0.076	-0.073	0.009	-13
Cd	0.337	0.040	-0.066	-0.212	0.025	0.201	818
Co	-0.24	0.18	0.08	-0.25	-0.06	0.19	-326
Cr	-1.23	1.32	-1.95	-1.14	-0.75	1.24	-165
Cu	0.61	1.73	0.67	1.77	1.20	0.56	47
Hg	6.02	5.95	5.60	6.38	5.99	0.28	5
Mn	0.81	2.01	1.87	0.73	1.35	0.59	43
Mo	0.11	4.30	-0.12	-0.07	1.05	1.87	178
Ni	-1.85	-0.84	-2.67	-0.89	-1.56	0.75	-48
Pb	-0.82	-1.55	-2.51	-1.82	-1.67	0.60	-36
Sb	2.092	-1.440	-2.460	2.556	0.187	2.173	1162
Se	9.135	18.122	8.547	12.853	12.164	3.815	31
V	0.738	12.579	0.315	-0.065	3.392	5.312	157
Major metals (mg/Nm^3)							
Al	0.013	0.126	0.000	0.001	0.035	0.053	152
Ca	0.091	0.179	0.099	0.101	0.118	0.036	30
Fe	-0.001	0.353	-0.032	-0.010	0.077	0.159	206
Mg	0.0051	0.0224	0.0011	0.0028	0.0079	0.0085	108
Ti	0.0007	0.0214	-0.0005	0.0003	0.0055	0.0092	168

Table E-9.
Total Metal Concentrations in the Stack
(Sums of M29 front and back half concentrations, in $\mu\text{g}/\text{Nm}^3$
or mg/Nm^3 as indicated; corrected by blank train data)

	10/25	10/26	10/27	10/28	Avg.	Std.Dev.
Trace metals ($\mu\text{g}/\text{Nm}^3$)						
As	30.4	26.0	36.0	34.6	31.8	3.9
B	583	439	410	395	457	75
Ba	39.7	46.5	41.2	40.6	42.0	2.7
Be	0.97	0.87	1.02	1.06	0.98	0.07
Cd	3.89	2.49	3.12	1.80	2.82	0.77
Co	-0.77	1.18	4.60	-0.51	1.12	2.14
Cr	27.04	30.72	48.02	64.70	42.62	15.01
Cu	13.32	12.57	14.53	21.25	15.42	3.44
Hg	6.08	5.97	5.62	6.40	6.02	0.28
Mn	2.84	10.23	7.88	9.17	7.53	2.83
Mo	45.6	42.4	47.5	52.4	47.0	3.6
Ni	0.92	3.14	9.93	20.81	8.70	7.74
Pb	19.2	14.1	-0.9	18.0	12.6	8.0
Sb	1.37	-6.61	-8.43	5.45	-2.05	5.69
Se	26.1	48.3	40.1	52.9	41.8	10.2
V	107.2	110.1	117.4	105.3	110.0	4.6
Major metals (mg/Nm^3)						
Al	1.06	1.15	1.42	1.41	1.26	0.16
Ca	0.94	1.00	0.99	1.01	0.99	0.03
Fe	3.17	3.52	3.57	3.65	3.48	0.18
Mg	0.170	0.194	0.204	0.201	0.192	0.013
Ti	0.225	0.246	0.263	0.263	0.249	0.016

